


The implications of the PNAE on the practices of family farmers and on the generation of opportunities for development

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ABSTRACT

This article aimed to identify the limits, possibilities of action and empowerment of social actors in the implementation of the program, focusing on personal and social development, considering the operationalization of the PNAE, in the light of the Theories of Social Networks, Theory of Social Practice and Development. A quantitative-qualitative approach was used as a methodological procedure, based on the case study, involving 07 municipalities in the Zona da Mata region of Minas Gerais, through 53 semi-structured interviews applied to family farmers, whose data were analyzed through the triangulation of manual and automated techniques by the software IRaMuTeQ and Microsoft Office Excel. The results identified that the profile of family farmers meets the characteristics that the PNAE seeks to promote, and pointed out the contributions and challenges involved in the process of implementing the program. It also shows that the interaction of family farmers in the social networks of the PNAE can influence their actions and perceptions, shaping their behaviors according to the structure in which they are inserted. It is concluded that the PNAE plays a significant role in personal and social development, but that there are challenges, such as excessive bureaucracy, delay in public calls, lack of interest of family farmers in participating in the PNAE, barriers to the creation of cooperatives and associations, among others, which need to be rethought and overcome to further advance the development of the region.

Keywords: Family farmer, PNAE, Social Networks, Challenges, Development.

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INTRODUCTION

This article aims to identify the limits, possibilities of action and empowerment of social actors in the implementation of the program, focusing on the promotion of personal and social development, considering the implementation of the National School Feeding Program (PNAE), in the light of the Expanded Theory of Social Networks and the Theory of Development, through the perception of family farmers in the Zona da Mata of Minas Gerais.

According to the National Fund for the Development of Education (2023), the PNAE plays a fundamental role in promoting healthy eating and integrating family farming into the food supply for public schools. Its transformations over the years, especially after Law No. 11,947, have had a significant impact in several areas such as: the encouragement of Family Farming, by seeking to promote the development of this economic sector; nutritional quality, through the inclusion of fresh and local products in school meals in public schools, contributing to food security; the diversification of school meals by purchasing food directly from family farmers, thus promoting a more diverse and culturally relevant diet in school meals; local economic development, by promoting the strengthening of family farming through the PNAE; the social dynamics and interaction in the relationships between family farming and schools, which aims to establish a closer connection with the actors and thus strengthen social ties, promoting a greater understanding of rural realities; and, in addition to valuing local products and family farming, by recognizing the importance of local agricultural production and encouraging regional food traditions.

Therefore, the PNAE should not only be analyzed from an economic perspective, but should also consider a series of social, cultural and dietary factors that are involved in this context. It is necessary to consider the relationship between family farmers and school feeding in the process of implementing the PNAE at the local level, since the implementation of the PNAE is not limited to putting into practice what determines public policy, but it is necessary to consider the dynamics, interactions, relationships, implications and influences between the actors involved (Freitas, 2017).

When thinking about the dynamic nature of social interactions and how this influences both the structure of relationships and the actions of the actors involved in the implementation of a public policy, such as the PNAE, it is important to understand how the PNAE's social networks occur; because, as Freitas (2017) points out, social networks play a fundamental role in shaping the actions and strategies of social actors. The Network Theory, addressed by Portugal (2006), provides an analytical framework that helps to understand social networks through three dimensions: form, content and norms of social networks. The "form" dimension refers to who is part of the networks; the "Content" dimension deals with the types of information or flows that circulate in the networks; and the "norms" dimension addresses the rules that regulate action within these networks. These dimensions provide a conceptual framework for the analysis of social networks and help to



understand how they work, thus allowing for a deeper understanding of social dynamics and the relationships between social actors and social networks.

In order to complement the theoretical understanding of social networks, an expanded theory of Social Networks was used, which seeks to combine the determinant components of networks with the elements of social practices, dialoguing with the categories of analysis of Bourdieu (1990) and Giddens (1984) specifically "habitus" and "structure". In other words, the expanded theory of social networks seeks to understand social networks in the context of social practice developed locally, considering that the connections between actors can be a valuable resource, by providing information about social interactions and the dynamics that shape the contributions and challenges of the implementation of public policies, such as the PNAE. In addition to seeking to understand that, in this process, there are possible connections with personal, social, local and regional development.

In this context, it must be understood that development goes beyond the socioeconomic aspect, that the term is a multidimensional phenomenon, resulting from a complex combination of factors. For Amartya Sen, a renowned Indian economist and philosopher, development is understood as a "state of happiness" of the human person, contemplating the multiple dimensions of development: social, economic, cultural, political, spatial and historical. According to the author, development is analyzed through the approach of the capacities and freedom of individuals; that is, the individual's ability to perform the actions he or she desires and values (Sen, 2000).

In this sense, the paradigm shift in the field of development began to value people's quality of life, considering several dimensions, in addition to economic growth, as aligned with the ideals debated by Sen (2000), who emphasizes the importance of freedom and opportunities for personal and social development. Therefore, it is important to analyze the dynamics and interaction of family farmers in the implementation of the PNAE in the municipalities of the Zona da Mata region of Minas Gerais, in order to understand whether, in the perception of family farmers, the program has contributed to the personal and social development of the region.

Family farming deserves to be highlighted, because, in fact, Brazilian family farming is responsible for a considerable portion of the food consumed in the daily lives of Brazilian families (Food and Agriculture Organization of the United Nations, 2014). Thus, family farmers are considered strategic actors for one of the largest food supplementation programs in the country, the PNAE, as they are dedicated to carrying out work that benefits both family farming, through the purchase of their local production, and strengthens the conditions of social and food reproduction of students in the public school system.

In this way, it is assumed that by combining the understanding of social networks, social practices and theories of development, it is possible to create more effective strategies for the economic, social, personal, human and environmental progress of a specific region. It is considered



that the implications of the PNAE on development are associated with the dynamics and interactions related to the implementation of the program itself, from the process of execution of the purchase of family farming products for school feeding and the way these actors relate to and influence the implementation of the program, through their social networks and the social practices developed, with reflections on their empowerment and on the development of the Zona da Mata region of Minas Gerais.

METHODOLOGICAL PROCEDURES

The research in question is a case study, of a quantitative-qualitative nature, which made use of semi-structured interviews and observation, in the context of the seven municipalities of the Zona da Mata of Minas Gerais, namely: Cajuri, Jequeri, Luisburgo, Mercês, Orizânia, Rio Novo and Volta Grande.

The semi-structured interviews were applied during the months of June to September 2022, with each of the family farmers directly and indirectly involved in the PNAE, totaling 53² interviewees from the seven selected municipalities belonging to the Zona da Mata region of Minas Gerais, who consented to³ be interviewed, who were identified as Family Farmers (FA). The semi-structured interview consisted of 70 questions, which were divided into three blocks. Block 1 examined the governmental support involved in the dynamics and interaction of the implementation of the PNAE; Block 2 addressed the implications/influences of daily practices on access to PNAE Social Networks, in the perception of family farmers and, finally, Block 3, which dealt with the contributions and challenges of PNAE as a public policy for the development of the region.

The analysis of the information collected from the Family Farmers was based on the content analysis technique proposed by Bardin (2011). Thus, based on the data collected and aiming to identify the limits, the possibilities of action and the empowerment of each actor in the implementation of the program, focusing on personal and social development, considering the implementation of the PNAE, through the perceptions of family farmers, it began with the analysis of Block 1, which was organized the general corpus, consisting of the 53 interviews, which were incorporated into the IRAMUTEQ Software, with the purpose of lexicographic analysis, through the Word Cloud 2, aiming to examine the dynamics and interaction of the implementation of the PNAE, in the perception of the interviewed family farmers.

The analysis of **Block 2** was initiated by performing a lexical analysis using the IRaMuTeQ software with all the answers of Block 2, generating a word ranking of approximately 2 thousand

² The 53 interviewees/family farmers who were hired by the schools to supply food to the PNAE in the municipalities surveyed were selected.

³ The family farmers signed the Free and Informed Consent Form, No. 56151822.4.0000.5153, approved by the Human Research Ethics Committee of the Federal University of Viçosa, according to registration number No. 5,354,563.



terms. From this ranking of words, the terms that are relevant to elucidate or that have a strong record in the relational dimension of the network were selected. This implies choosing the keywords that helped to understand the relationships between family farmers. The selected terms became Units of Records that were organized, in name or categories/subcategories, using a *Microsoft Office Excel* spreadsheet, thus creating a data structure, based on the Theory of Social Networks of Portugal (2006), which resulted in a figure called hierarchization. This hierarchy addresses the operational concepts of social networks defined by Portugal (2006), which focuses on key questions such as "Who?", "What?", and "How?", which allow us to understand social networks from the perspective of family farmers.

During the analysis of **Block 3**, the collected data were organized in a Microsoft Office Excel spreadsheet and, later, were transported to the IRaMuTeQ, where the analysis was made by means of the Word Clouds, aiming to highlight relevant keywords/terms from the corpus of analysis of the interviews, on the contributions of the PNAE, as a public policy aimed at development. According to Brito (2019), word clouds are a data visualization technique that displays words based on the frequency at which they appear in the text and that are displayed prominently and in different sizes, which allow grouping and organizing words that can represent important themes, concepts, or issues related to the PNAE, such as public development policy. Thus, in Block 3, a general Word Cloud was generated with all the vocabularies of the interview answers, and then seven Word Clouds were generated, such as the answers of the respective selected municipalities of the Zona da Mata of Minas Gerais, which were discussed focusing on the contributions of the PNAE at the local level. Soon after, the analysis of Similitude was performed, which allowed us to understand/identify connections and patterns in the text, through simultaneous occurrences and, in this way, it was possible to visualize, more clearly, the structure of the content of the textual corpus in another way; that is, it made it possible to understand/identify the challenges and the relationship of the PNAE and its impact as a public policy for personal, human and social development, in the Zona da Mata region of Minas Gerais, focusing on the perspective of family farmers.

RESULTS AND DISCUSSION

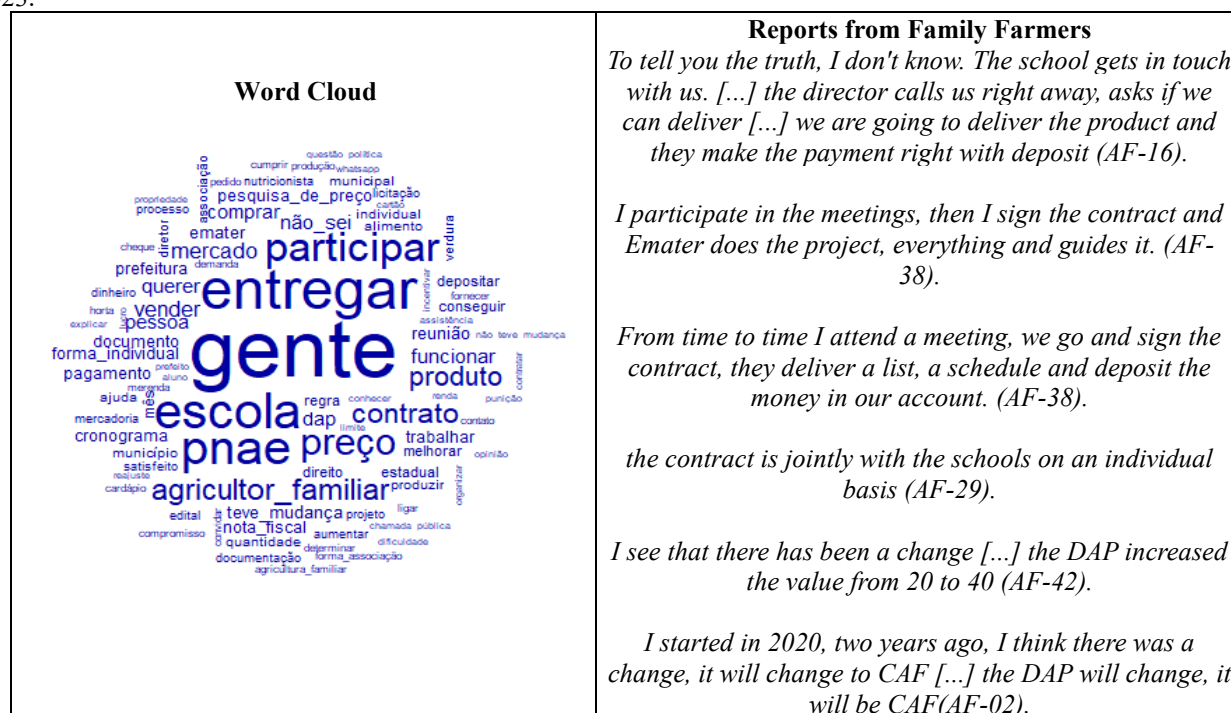
Based on the data analyzed, four points were organized for presentation and discussion, starting with the presentation of the Support of the Institutional Leaders involved in the Dynamics and Interaction of the implementation of the PNAE. Then, it addressed the Implications/Influences of Daily Practices to the access of the PNAE Social Networks, from the point of view of the Family Farmer. Subsequently, we sought to discuss the challenges and contributions of the PNAE as a public policy for Development.

SUPPORT OF THE INSTITUTIONAL LEADERS INVOLVED IN THE DYNAMICS AND INTERACTION OF THE IMPLEMENTATION OF THE PNAE

In order to examine the dynamics and interaction of the implementation of the PNAE, in the perception of the interviewed family farmers, the analysis was made by means of the Word Clouds, which contributed to the visualization, in a graphic way, of the most relevant words, which stood out in the interviews carried out, making it possible to record the perception and knowledge of the family farmers regarding the stages of implementation of the PNAE process. showing how they evaluate the management of the PNAE, as well as the contribution of their work to the achievement of food and nutrition security in the context of schools.

Regarding the stages of the PNAE implementation process, in the reading of family farmers in the seven municipalities studied, it is associated with the delivery of their products to schools, and the partnership with EMATER, which assists in the organization of the documents, is highlighted, as shown in Figure 1.

Figure 1 – The stages of implementation and changes of the PNAE, according to the perceptions of family farmers in 2023.



Source: Survey data (2023).

It is evident, when analyzing the word cloud, that the terms **"people"**, **"deliver"**, **"school"**, **"PNAE"** and **"participate"** are frequently mentioned by the interviewees, which highlights the link and the importance of these terms in the implementation of the PNAE. This is because the main objective of the program is to provide school meals to public school students through the acquisition of products from family farming.



On the other hand, the terms "**I don't know**", "**meeting**", "**EMATER**", "**documentation**", "**price research**", "**contract**", "**schedule**", "**invoice**", "**payment**" and "**deposit**", show the close connection of these terms present in the legislation and in the rules for the PNAE implementation process. The term "**I don't know**" shows that many of the family farmers are not able to fully understand the implementation of all the stages of the PNAE, as evidenced in the reports presented in Figure 1. In the municipalities of Cajuri, Jequeri, Luisburgo and Mercês, the majority of family farmers reported not knowing or not knowing the stage of operation of the PNAE in their municipality, with the exception of the municipalities of Orizânia, Rio Novo and Volta Grande, which verbalized knowing and understanding the stages of the PNAE.

Thus, the lack of knowledge or understanding of many family farmers about how the PNAE works implies the inference that this fact may be due to the complexity of the program or to the lack of clear and accessible information about its procedures and requirements, thus indicating one of the areas of concern or challenges that farmers face when participating in the PNAE, as evidenced in the testimonies of family farmers: "there is a lack of information about this, about the rules we have to make to deliver it to school" (AF-08); "they don't divulge about the work of the PNAE, I don't even know, I think that the only information we know is only through Emater itself" (AF-28); and "these stages could be better publicized here in the municipality" (AF-29). These facts are consistent with Valadares' discussion *et al.* (2022), by presenting the concrete aspects of the challenges and potentials associated with the insertion of family farmers in institutional markets, such as the PNAE, highlighting the failures in the communication channels with family farmers, a requirement for them to join the program.

Another point that draws attention is that the lack of information and understanding inhibits the empowerment of the family farmer in the PNAE process, as it is known that the family farmer plays a fundamental role in this context, being considered an essential social actor in the implementation of the program. However, it is important that this farmer is not just a food supplier, but rather an active participant in the whole process. This implies their insertion in the different stages of the process, from planning to execution. Thus, it is important to recognize the family farmer as a strategic partner in the process of implementing the PNAE, going beyond the simple delivery of food. According to Mossamann and Teo (2017), in this context, nutritionists play an important role, acting as facilitators and supporters in the empowerment of family farmers, seeking to promote spaces for discussion and negotiation, where farmers can express their needs, seek training, and information throughout the implementation stage of the PNAE.

It is observed that in the local context of the interactions, due to the structure in which the social actors are inserted, the "habitus" internalized by them occur in a different way, which create different rules and understandings based on the dispositions that the actors have to interact in their



social practices, that is, the social practices and interactions in the local context are influenced by dispositions internalized by the actors involved in the structure. In the case mentioned above, it can be inferred that family farmers in some municipalities are not considered protagonists of the PNAE implementation network due to the structure of legitimacy and meaning in which they are inserted; that is, there are other social actors in the dynamics of the PNAE implementation network that stand out as central, such as, for example, the Institutional Leadership represented by EMATER, which will be addressed in the next topic.

With respect to the terms **"meeting", "EMATER", "documentation", "price research", "contract", "schedule", "invoice", "payment" and "deposit"**, verbalized by family farmers, from the seven municipalities, summarizes the stage of the PNAE, as proven in the testimonies that *"They invite us to participate in these meetings of the Public Call (AF-29), which "Emater organizes the documentation for us, does the project, sends it to the school" (AF-42), which schools do "the price research in the market and takes to make the bid, and negotiate with us" (AF-29), which they sign "the contract individually, and they give us the schedule to deliver and then have to issue an invoice (AF-49) and, finally, the schools do the "Payment straight with deposit at the bank or with the check, plus deposit" (AF-16). These stages of the implementation of the PNAE were ratified in the work of Freitas and Freitas (2020), who highlighted the interaction and dynamics in the implementation of the PNAE locally.*

Another highlight within the word cloud is the terms **"had a change", "DAP", "increase", "price", "help", "individual form"**, This group reveals that the majority of family farmers have the same perception or even similarity of ideas in relation to the changes that have occurred in the PNAE in recent times, especially with regard to the process of implementation of the PNAE. For family farmers, they believe that *"yes, there was a change, that the PNAE was maturing, with the issue of dealing with the family farmer himself, valuing the family farmer" (AF-48). They further report that "the DAP is going to change, the DAP is going to be the CAF" (AF-02), and that "the issue of DAP has improved, which used to be only 20,000, now it is 40" (AF-41), and that this is an added incentive, that "paid better, the price improved, this year it was possible to increase the percentage" (AF-39).*

Resolution No. 21, of November 16, 2021, which increased the limit of the individual contract for the sale of the family farmer for school meals from 20 thousand to the maximum value of 40 thousand per Family DAP/year/executing entity (Brasil, 2023), seems to have had a positive impact on the perception of the family farmers involved. This change has brought significant benefits, such as increased financial security and satisfaction for these farmers. They now feel more confident in consolidating their partnerships with schools and providing quality products to the communities as reported, *"it's increased DAP, we can sell up to 40 thousand, that's good, it's more security and*



increases income a little more" (AF-13), in addition to "it's increasingly consolidating [...] and people see our work, they see that we bring a quality product to the community" (AF-40). This change benefits not only family farmers, but also the institutional market, stimulating the growth of the local economy, generating more income and employment.

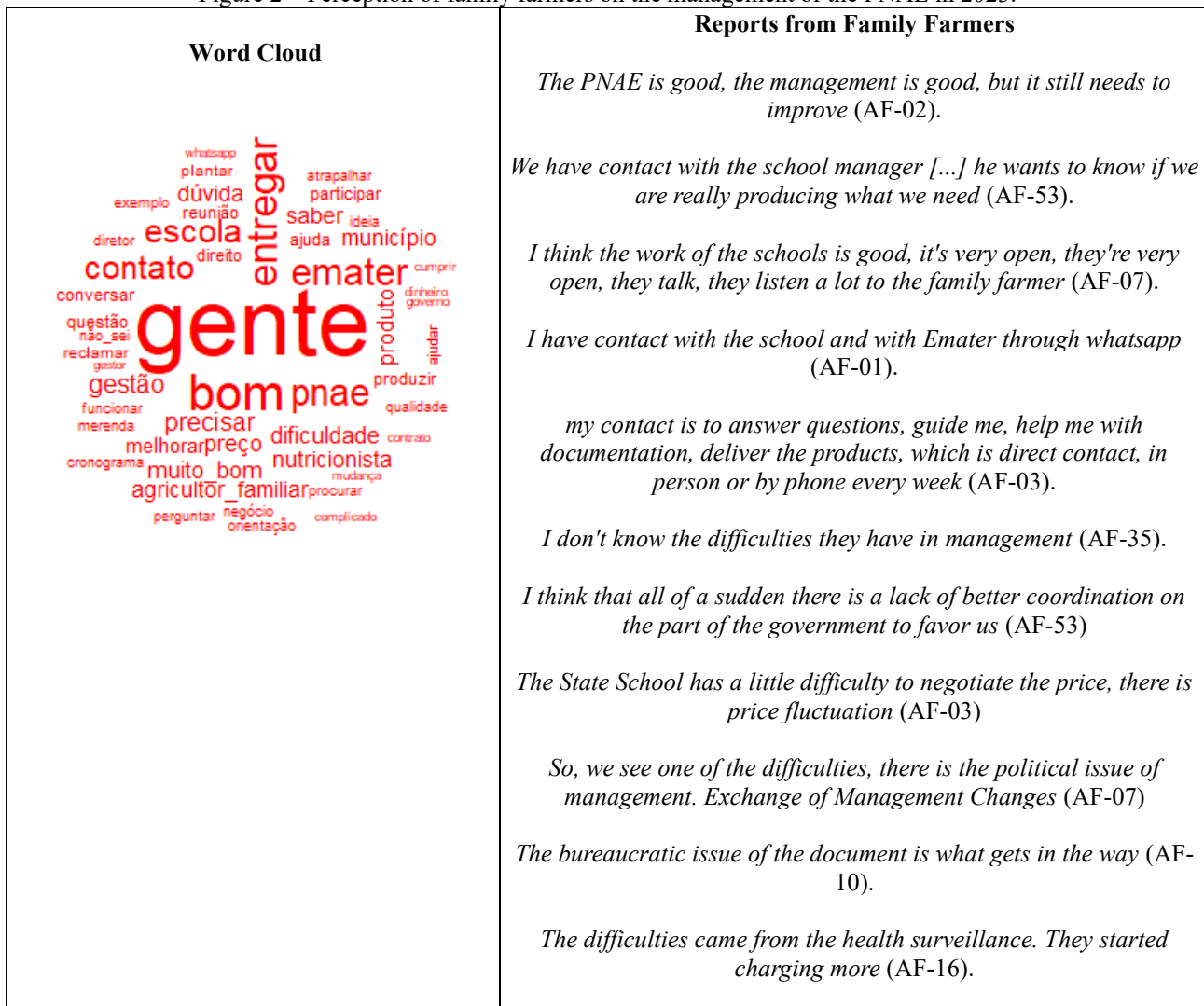
Another point addressed by family farmers would be about changes in policies related to family farming and DAP, which would be transferred to the National Registry of Family Agriculture (CAF). According to Brasil (2022), CAF is now a basic requirement for family farmers' access to public policies to support and encourage family agricultural production. This means that family farmers need to register with CAF in order to receive benefits and government support for their agricultural activities.

The Ordinance of the Minister of State for Agrarian Development and Family Agriculture No. 1, of February 7, 2023, entered into force and extended the validity period of DAPs for another year. This means that DAPs due between February 8, 2023 and January 31, 2024 will be automatically extended for 12 months, allowing family farmers to continue to access the program's benefits. It can be inferred that these changes are related to efforts to support family farming in Brazil, facilitating family farmers' access to public policies and to ensure their continuity in the support program, as in the case of the PNAE, as corroborated in the work of Gonçalves, Gama and Medina (2020), Pimentel and Claudino (2020), Coraçari and Gomes (2023) and Christoffoli *et al.* (2021).

Figure 2 illustrates the Word Cloud from the perception of family farmers regarding the evaluation of PNAE management, highlighting the form of contact and the difficulties that managers have in the process of implementing the program.

In the word cloud, it can be observed that the terms **"people"**, **"good"**, **"PNAE"**, **"management"**, **"need"** and **"improve"** are more evoked, demonstrating a connection with the evaluation made by family farmers regarding the management of the PNAE, which is confirmed in the reports in Figure 2. In the words of the family farmers, it is recorded: *"the management of the PNAE (AF 03 M) is good; that "the PNAE works well, the management is good, work is good" (AF-09), however, they emphasize that it needs to improve, that "the price issue that needs to improve (AF-23), but family farmers realize that the management is trying to improve, as reported "we see that they are fighting to be able to improve (AF-41). Despite evaluating the management as good, the family farmers perceive some weaknesses in the management of the PNAE, as corroborated in the studies of Porrua *et al.* (2020).*

Figure 2 – Perception of family farmers on the management of the PNAE in 2023.



Source: Survey data (2023).

The reports of the family farmers show that the positive evaluation of the management of the PNAE reflects the internalization ("habitus") of norms and values related to the effectiveness and continuous improvement of the program, thus demonstrating an awareness of the need for changes and adjustments. This can be interpreted as an expression of the "habitus", since family farmers embody a willingness to constantly seek improvements.

Another group of terms highlighted in the Word Cloud (Figure 2) are **"contact", "school", "meeting", "whatsapp", "doubt", "EMATER", "nutritionist", "deliver", "product", "idea" and "help"**, terms that once again highlight the perception of family farmers about the contact they have with management in the process of implementing the PNAE. The family farmers reported that they get in touch *with Emater and at school it is the nutritionist that I have the most contact with [...] for us to deliver the products to the school*" (AF-01), and that the contacts are *"to guide, to clear up doubts and seek feedback"* (AF-10); In addition to doubts, they seek to *"talk, exchange ideas, [...] this is good for us, I try to walk properly, and always participate"* (AF-32). According to Giddens (2009), the interactions and social relations of family farmers in the context of the PNAE, verbalized



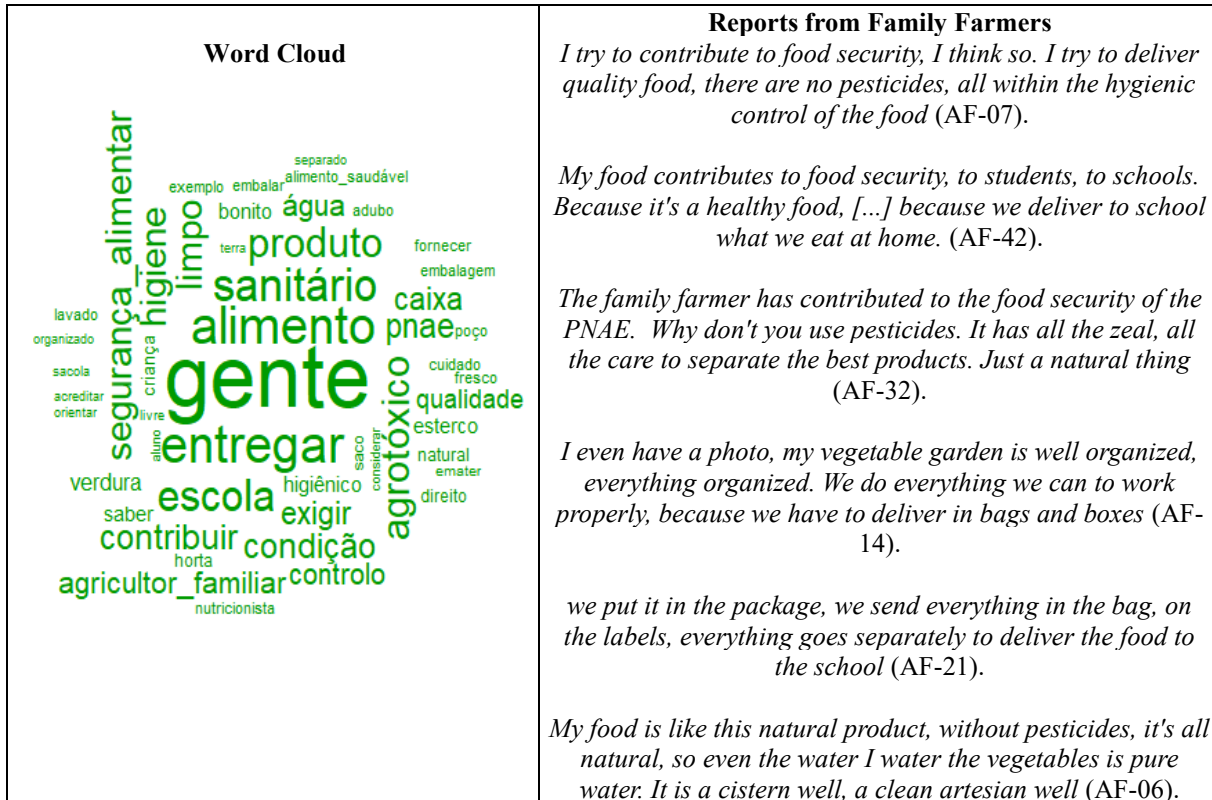
in the terms above, involve the rules and resources available to family farmers in their social practice. In other words, when family farmers seek contacts, participate in meetings, use means such as WhatsApp, and interact with professionals, such as nutritionists and EMATER, it reflects the social structure that shapes their actions and decisions.

Therefore, the statements of family farmers can infer an interaction between the "habitus", with its emphasis on internalized provisions, and the *structure*, with its focus on the rules and resources available in the context of social practices, demonstrating that family farmers had a critical awareness of the management of the PNAE, while actively seeking guidance and interaction with different social actors in the process of implementing the PNAE. In other words, the emphasis on seeking guidance, answering questions, exchanging ideas, and actively participating indicates a response to the available social structure. Thus, the ability to seek help and engage in social interactions is aligned with the ability of social actors to actively influence their lives.

As for food security, from the point of view of family farmers, in the seven municipalities surveyed, they have contributed to ensuring healthy eating for public school students, as highlighted in Figure 3.

The terms **"people"**, **"sanitary"**, **"food"**, **"deliver"**, **"school"**, **"demand"**, **"control"**, **"family farmer"**, **"contribute"**, **"hygiene"** and **"food safety"**, show the promotion of Food and Nutritional Security, developed in the context of the PNAE. The close relationship between food security and PNAE is an essential initiative to ensure that students have access to healthy and adequate food during their school journey. In other words, the PNAE plays a fundamental role in the realization of this right to school meals, as established in the sixth guideline of Article 2 of Law No. 11.947, of June 16, 2009 (Brasil, 2009). This guideline highlights the importance of ensuring food and nutrition security for students, with equal access, taking into account biological differences between ages and health conditions, as well as meeting the specific needs of those who are in social vulnerability (Brasil, 2023). Thus, it is important to emphasize that the right to school feeding is a public policy developed in many countries, including Brazil, where the FNDE plays a fundamental role in promoting food and nutritional security for students, by investing resources in the purchase of food directly from family farmers.

Figure 3 – Contribution of family farmers to food security through the PNAE, according to perceptions of family farmers in 2023.



Source: Survey data (2023).

In the perception of family farmers, they have been contributing to food security in schools, they are always concerned and asking if their food is serving schools and if they need to improve, and they report that their food "has helped for the food security of the PNAE" (AF-18), porque "They are natural products, without pesticides" (AF-06), in addition to being "Encouraging Boys to Sometimes Eat Vegetables and Vegetables and Fruit" (AF-23).

Another aspect highlighted is the care with the delivery of food, found in the terms "washed", "clean", "organized", "bag", "box", "packing" and "separated", which demonstrates the commitment of family farmers to ensure that food is within hygienic and sanitary conditions when it arrives at schools, following the guidelines and requirements of the PNAE. And this fact is confirmed in the verbalization of family farmers when they say that "the nutritionist always tells us [...] to deliver everything organized" (AF-48), "Everything very well arranged, clean, washed" (AF-19), in the "packaging with transparent bag and labels" (AF-12), and that it cannot deliver the food to the "wooden box, because now it has moved to plastic box" (AF-51). In the statements of the family farmers, it is possible to perceive elements of the "habitus" related to the family agricultural culture, when they emphasize the production of natural food, without pesticides, and the care with the delivery of food, demonstrating an orientation towards more sustainable practices and aligned with a vision of food health. Thus, the "habitus" of being concerned with the quality of food provided to



schools and encouraging the consumption of vegetables and fruits by students may reflect a deep-rooted attitude of social responsibility and concern for nutrition.

In addition, the presence of the terms "**water**", "**pesticide**", "**manure**", "**well**", "**vegetable garden**" and "**EMATER**" suggests that both schools and EMATER play an important role in guiding family farmers on safe practices in food production, such as the use of chlorinated water, avoiding the use of pesticides and following food safety guidelines. This point is proven in the testimonies of family farmers, when they highlight that "*The food arrives clean, we wash it with chlorinated water*" (AF-03); that EMATER advises that "*We can't irrigate the vegetables in the garden with water from the river*" (AF-07), "*advises that in the garden bed you cannot use manure*" (AF-18), and that "*You can't throw any pesticide on the food in your production*" (AF-04).

Another point that draws attention is that the references to terms such as "nutritionist", "EMATER" and to the guidelines on care in food production indicate the presence of institutional structures and norms that influence the practices of family farmers. In this way, the adaptation of farmers to the requirements of the PNAE and to the recommendations of EMATER suggests an interaction between individual actions (of family farmers) and institutional structures (nutritionist, EMATER, PNAE guidelines).

In this sense, the positive perception of family farmers in relation to their contribution to food security, in the context of the PNAE, demonstrates the sense of responsibility they have in ensuring that the food they supply meets the hygiene and quality standards required by schools and the PNAE. In other words, it can be inferred that family farmers are aware of their contribution to food and nutritional security in schools and are willing to take measures to ensure that their food can meet the quality standards required by the PNAE, which is corroborated in the work of Abreu (2014), Freitas (2017) and Santos and Torres (2022).

IMPLICATIONS/INFLUENCES OF DAILY PRACTICES ON ACCESS TO PNAE SOCIAL NETWORKS, FROM THE POINT OF VIEW OF THE FAMILY FARMER

In order to understand the implications and influences on everyday practices, we sought to focus on the experiences and capacity of the actors involved to collaborate, negotiate and adapt the program to local needs and realities; that is, to understand how social practices influence the context of PNAE's Social Networks at the local level. To this end, it was considered the perspective of the Extended Theory of Social Networks, which combines the Theory of Social Networks of Portugal (2006) with the Theory of Social Practices, pointed out by Bourdieu (1990) and Giddens (1984), seeking to examine the "habitus" (devices internalized by the actors) and the "structure" (meaning, domination and legitimation), which exist in the behavior and fields of action of the various actors,



in order to elucidate the social practices developed and the social networks activated in the process of implementation of the PNAE.

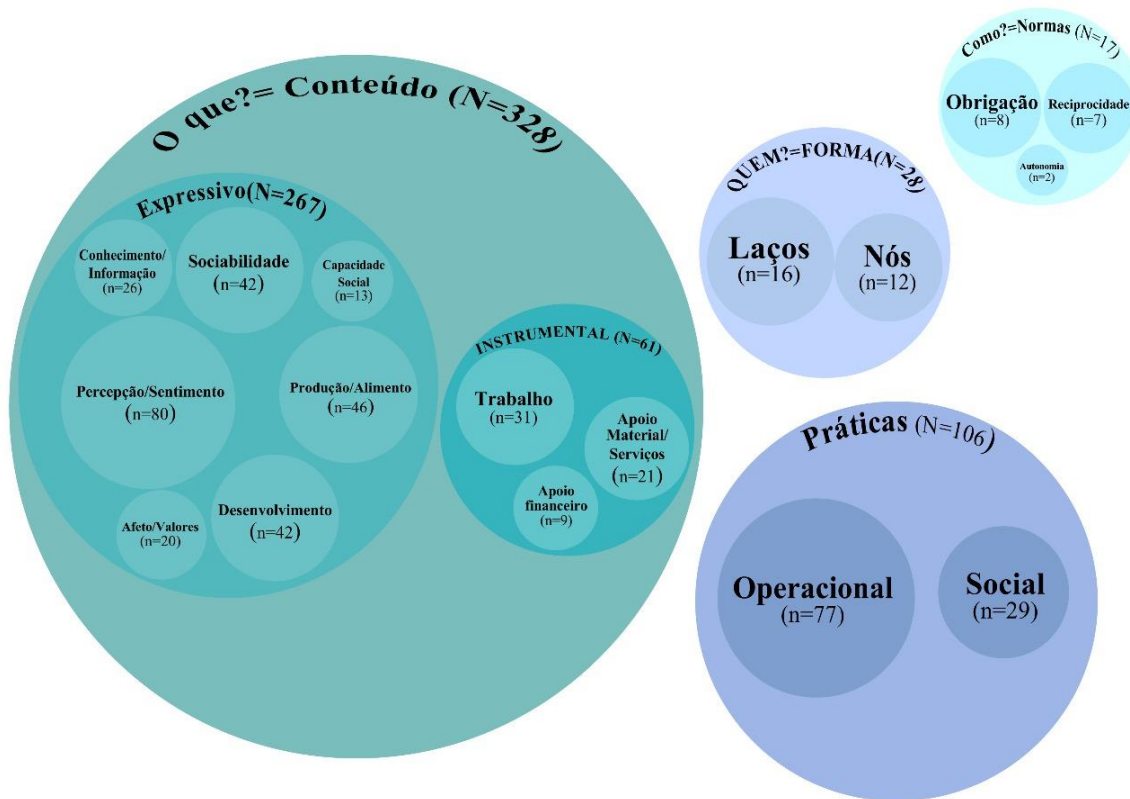
In this context, from the perspective of family farmers, it was addressed how they perceive the practical activities, rules and social networks that circulate the actions and relationships involved in the process of implementing the PNAE. A **total of 17 elements** were identified as the main topics addressed, which were grouped under the following categories: Practices (Operational and Social); Operational Concepts of the PNAE Social Network (**Form** – Knots/Actors and the Ties; **Content - Instrumental** = Work, financial, material support and services, and **Expressive** = Development, Sociability, Affection/values, Knowledge/Information, Social Empowerment and Perception/Feeling; Production/Food; in addition to the Norms - Obligation, Reciprocity, Equality and Autonomy) as can be shown in Figure 34.

In order to understand the main points addressed, the **17 elements** were analyzed aiming at the **Social Practices among the actors of the PNAE, focusing on the "habitus" and "structure"** together with the **Operational Concepts of the Social Network of the PNAE** (Portugal, 2006), in view of the proximity between the subjects addressed in the investigations, characterized below.

In order to analyze the social practices developed by the actors involved in the PNAE, family farmers were asked to comment on which actors were part of the PNAE implementation process and how their actions were constituted. Thus, the aspects visualized in Figure 4 contemplate the operational concepts of social networks addressed by Portugal (2006), which considers their **form** (who is part of the networks?), **content** (what? what are the contents of the network flows?) and the **norms** (how? what are the norms that regulate their action?).

In the reading of family farmers, the **Form** that makes up the PNAE; that is, "**Who is part of the PNAE networks**", is related to the 12 Nodes/actors, namely: **Family Farmer, School, EMATER, City Hall, Union, Municipality, Nutritionist, Student, CAE, State, director and cook, as highlighted in the reports:** "*the actors who participate in this PNAE, it is school, it is city hall, is a student*" (AF-16); "*The state, the school, Emater, the family farmer, and I think there is the food council*" (AF-07), "*the nutritionist and I think the lunch lady as well*" (AF-48) and the "*municipality itself*" (AF-09). Now, with regard to the Union, the family farmers perceived little action on the part of this We/actor in the process of implementing the PNAE, reporting that "*like the union, I have almost no contact*" (AF-39), the "*union is a little weaker*" (AF-51), the "*union does is take the grade*" (AF-32), and "*lost some of its strength*" (AF-24).

Figure 4 – Main elements of the PNAE social network, in the perception of family farmers in the Zona da Mata region of Minas Gerais



Source: Survey Data (2023).

The perception of family farmers regarding the actors intertwined in the social networks of the PNAE demonstrates their reflexive capacity to design the actions of other social actors, as a determinant of the way they internalized their experiences of the external world. In other words, family farmers can maintain their way of acting by interacting with other actors in the PNAE's social networks, adapting, adjusting and building their perceptions throughout the process, in addition to shaping their behaviors through the structure in which they are inserted. This statement is corroborated by the thoughts of Bourdieu (1990) and Giddens (1984) when they emphasize that the performance of social actors in relation to their social practices inside and outside institutionalized spaces is determined by the "habitus" and "structure" that make up their social context.

In this context, from the nodes of the networks linked to the PNAE process, family farmers pointed out **17 types of ties**, which were established among the actors of this program, which can be summarized as: **family, community, colleague, neighbor and friend**, as reported: "we work everything as a family to deliver to the school" (AF-29); "*working in the community is much more practical, because it helps with transportation to deliver our product to the school*" (AF-37; and "*colleagues, neighbors that I see also delivering, talk to us about the correct way to deliver food to school*" (AF-48). For Portugal (2006), the strength of ties must consider a set of factors, such as: the plurality of exchange contents existing in a bond, the duration of the relationship, emotional intensity,



intimacy and reciprocal services; as well as being classified as **strong or weak, positive and negative, and active and passive**.

Thus, **strong and weak bonds** are based on the intensity, duration of a relationship, degree of intimacy, and reciprocal services. **Positive and negative ties** concern the nature of relationships, with **positive ties** being characterized by actors sharing common goals and interests, while **negative ties** involve differences and distinctions between the individuals or entities involved. Now, **active and passive bonds** are based on the frequency and nature of interactions, as **active bonds** involve regular and direct interactions, such as mutual aid, advice, support, and criticism; and on the other hand, **passive bonds** do not involve everyday interactions, but are still important for individual and family safety, as people know that they can count on these bonds when needed (Portugal, 2006).

In the view of family farmers, the ties woven by the nodes of the networks activated to the PNAE process can be represented as **strong, positive, active and passive**. In this context, the **strong ties** represent solid and lasting relationships between family farmers, EMATER and schools, characterized by a high level of interaction and mutual collaboration (**structures**), and which have a common objective of providing quality school meals (**positive**) contributing actively and constructively to the effectiveness of the PNAE. Now **active ties** involve constant and collaborative interactions between these actors, who are engaged in the provision of healthy food and in the continuous exchange of knowledge and practices related to agricultural production, thus contributing to the construction of a "habitus" of cooperation and joint learning. Weak ties, on the other hand, refer to interactions with other actors involved in the PNAE that are not part of the central core of the actors, where interactions are more sporadic and less profound compared to strong and active ties. However, these actors are available for support when needed, which makes them **passive ties**.

Among the strong ties perceived by family farmers, it is important to highlight that the relationship between family farmers, EMATER and schools became fundamental for the implementation of the PNAE, when they stated that: "*Now what stands out the most is basically the family farmer, the school and Emater, it is the three that make the PNAE happen*" (AF-21); that EMATER "*is a link, a link with the school in this process [...] it guides, articulates everything*" (AF-49); "*She embraces... Embrace the cause*" (AF-03); that it has "*a very important role in this PNAE process*" (AF-05); and that it is being "*a connection between all of us and the PNAE itself*" (AF-35). This relationship was highlighted in the studies of the authors, Valadares *et al.* (2022) and Bastos *et al.* (2022), who highlighted the important role of EMATER in this process, as an institution that performs several functions, such as the connection between family farmers and schools; in the articulation and intermediation in commercialization, becoming an indispensable partner to mediate the entry of family farming into the PNAE, in order to ensure operational and formal conditions to participate in the program. In this way, it can be inferred that this analysis demonstrates the



complexity of the social networks, with a focus on collaboration, that are formed within the scope of the PNAE. Strong and active ties are essential to the success of the program, as they represent the commitment and ongoing cooperation between key actors. Weak ties also play an important role, as they broaden the network of support and resources available when needed, even if their interactions are less frequent. These statements are in line with the work of Campos (2014), Santos (2016) and Freitas (2017), who seek to understand these different types of ties that can help further strengthen public policies, such as the PNAE, in addition to improving the quality of school meals offered to students and local development.

With regard to the **content** of the network flows ("**What?**"), the **expressive and instrumental contents** to which the practices and ties of family farmers allowed to be associated were identified, highlighting respectively, **Perception/Feeling, Production, Sociability, Development, Affection/Values, Knowledge, Feeling, Social Empowerment and Work, Material Support/Services and Financial Support**, which are elements that circulate in the PNAE's social network.

From the point of view of family farmers, the expressive perception/**feeling content** that surrounds the daily practices in the PNAE implementation process is still complex/confusing and complicated, due to bureaucratic requirements and lack of clarity, knowledge and information on how to effectively participate in the program, as reported "*I don't know how this school process works, there are a lot of documents*" (AF-29) and "*The bureaucracy of the PNAE bidding process is so great that it discourages us [...]. It's complicated*" (AF-49). These facts were found in the works of Campos (2014) and Santos (2016). Thus, it is important to simplify and make bureaucratic procedures more flexible and provide clear guidelines so that family farmers can more easily get involved in the PNAE implementation process.

However, family farmers perceive their role in the PNAE process, as they recognize the need to diversify their **food production** to better meet school demands and understand that through **sociability, knowledge/information** and **training**, would be a decisive strategy for their development, as well as for the efficiency and effectiveness of the PNAE. In other words, by establishing interpersonal relationships and collaboration with other family farmers and institutions, they can create agreements and facilitate access to shared resources and knowledge. Therefore, for family farmers, it is important to simplify the process of implementing the PNAE, promote the diversification of production, encourage sociability, and invest in training and knowledge, actions that allow them to develop and contribute more effectively to the progress of the PNAE social network, as well as to the development of their municipality and region.

However, the family farmers bring in their statements the issue of **affection/values** perceived in the social practice of the PNAE, when they describe the expression and experience of their



emotions, according to the statement: "I get emotional, we feel very happy when we are praised by the cooks, that our product is good *for the children*" (AF-04); "*the PNAE brought life to the family farmer, because here in the countryside there is freedom, there is no lack of service*" (AF-24); "*we have to be honest when delivering and receiving, this is a reliability that the PNAE gives me*" (AF-53). Despite being distinct terms, "affection and values" are intertwined and can significantly influence the way a person experiences life and makes decisions; that is, both affection and values play important roles in decision-making in the lives of family farmers when delivering and receiving products, highlighting the importance of these ethical principles in the social practice of the PNAE.

From the point of view of family farmers, **Work, Material Support/Services and Financial Support** were the elements highlighted in the instrumental content of the networks. For them, their participation in the PNAE process requires **work** and effort to grow, harvest, process and deliver their products, according to the requirements of the program (**structure of meaning**), in addition to ensuring the constant supply of fresh and healthy food in schools, as verbalized "*we work all the time*" (AF-53); "*We make a hell of an effort to plant and deliver it to the school*" (AF-18). For this to happen, in the view of family farmers, **material support and services** are needed to improve the production and quality of the food they provide to the PNAE, such as access to agricultural technologies, quality seeds, adequate equipment, as well as training and technical assistance services, which can be provided to help them improve their cultivation and management practices (**legitimation structure**). as reported: "*we have to buy equipment to plant*" (AF-02); and "*we need support, assistance, and encouragement to continue in the PNAE*" (AF-22). For family farmers, **financial support** is also necessary, "*we need various types of help, such as financial issues*" (AF-17), which can occur through partnerships, shared resources, investment, credit lines or financing (**domination structure**) that can allow family farmers to make production costs feasible and expand their operations in the PNAE operational process.

It is important to highlight that these expressive and instrumental contents, according to Ferreira (2018), are not exhaustive and may vary according to the specific characteristics of the PNAE social network, as well as according to the needs of its actors at the local level. This suggests that social networks related to the PNAE are not standardized, and the information shared on them can cover a variety of topics and content, both expressive (such as opinions and discussions) and instrumental (such as practical information and resources). This flexibility allows the PNAE social network to adapt to local needs and the specific characteristics of each context.

Regarding the issue of **Norms**, "how?", in the perception of family farmers, the norms of **Obligation, Reciprocity and Autonomy stand out** in the process of implementing the PNAE. These points relate to what Portugal (2006) highlights that the institutionalization of networks



produces a set of norms and constructs meanings that guide the action of actors and define their identity.

In the reading of family farmers, the **norm of the Obligation** refers to an institutional obligation; that is, they see the PNAE as an institutional obligation, something that the school must comply with according to the legislation, as proven in the reports "*it is something like this, it is mandatory*" (AF-08), "*it has become an obligation for the school to buy from us*" (AF-51), "*by law, they are obliged to compare with us*" (AF-39), being their right, "*we know that it is our right, that of the family farmer*" (AF-03). However, they also perceive the **norm of Reciprocity**, when they highlight: "*friendly relationship, of reciprocity, one wanting to help the other*" (AF-42); In other words, the reciprocity relationship in the context of the PNAE means that there is a friendly and collaborative relationship between family farmers and the actors involved in the program, who assist family farmers in the purchase of food, in the organization of bureaucracy and in the creation of agreements that benefit both parties. Finally, the **Autonomy norm** refers to the ability of actors to define their relationship with other actors in the context of the PNAE, which can be associated with the freedom to choose whether or not to participate in the PNAE, as well as autonomy in decision-making related to the program.

These norms, delimited by the structures and perceived by the family farmers, show how the program influences their relations with other actors involved. In other words, the PNAE is not only a legal imposition/obligation, but also an opportunity for collaboration and autonomy for family farmers, based on the understanding of internalized mental structures ("habitus") and the norms that govern the program (structures). This fact is explained by Bourdieu (1990) and Giddens (1984), when they state that people interact with the social world and understand it through "habitus" and "structure", which enable social practices to reproduce themselves over time. In other words, habitus influences people's actions, while social structures provide the context in which these actions occur and, in the realm of social practices, people shape their actions based on the structures they encounter in their daily lives.

Through the statements of the family farmers, the dynamics and interaction that occurred in the social practice of the PNAE implementation network in the seven municipalities occur with some different particularities among the municipalities, as briefly described below:

In the municipality of Cajuri, Minas Gerais, family farmers verbalized the main social actors involved in the operationalization of the PNAE, highlighting the municipal and state schools, EMATER and the municipal nutritionist. Also acknowledging that, although the Union exists in the municipality, this institutional leadership has no connection with the PNAE implementation network. Family farmers reported that they deliver their products directly to the only state school in the municipality, while in municipal schools they deliver to a central point stipulated by the municipal



education department, which is responsible for distribution to three municipal schools in the municipality. EMATER, in the view of the farmers, is a central partner in the execution of the PNAE, which registers, disseminates, dialogues with all family farmers to supply food to the school. They reported that they know that there is a School Feeding Council (CAE), but it does not work, that the schools make a public call notice preparing a notice with semiannual production specifications, but with regular weekly deliveries stipulated in the schedule, delivered to each family farmer. They provide fruits, vegetables, legumes, and tubers to schools. It can be seen that the information, articulations and negotiations for the purchase of food for school meals take place through interactions between the actors, who use the meeting, WhatsApp, conversations, dialogues and agreements, as necessary mechanisms for the buying and selling process to happen. The majority of family farmers depend on the instructions of EMATER and schools, highlighting the role of farmers as underlyers, that is, they occupy a marginal role in the process of implementing the PNAE network. However, the family farmers of Cajuri emphasize their feelings along with the interaction with the schools, such as help, reciprocity and obligation.

In Jequeri, Minas Gerais, family farmers present municipal and state schools, EMATER and municipal nutritionists as social actors, and emphasize the absence of the Union's role in the process of the PNAE implementation network in the municipality. They point out that they work in schools through the Agricultural Community Association for Food Production of the Rural Communities of Jequeri, MG (AGROJER), coordinated by the local EMATER, and that the state schools make the unified public call notice every six months to serve the five schools in the municipalities, for the municipal schools, the municipal education secretariat together with EMATER makes the public call notice every six months and the association organizes it with the farmers family members to deliver to the eight municipal schools. Family farmers reported that they deliver fruits, vegetables, legumes and pork. It was evidenced, in the statements of the family farmers, that the dynamics of information, articulations and negotiation of the PNAE implementation process is limited to the municipality with centrality in EMATER and in the schools, thus leaving the family farmers on the margins of the network, depending on the information that circulates. This dynamic of interactions between the actors, according to the family farmers, involves meetings, personal conversations, communication through WhatsApp, agreements and dialogue, as necessary mechanisms for the implementation of the PNAE network.

In the municipality of Luisburgo, MG, the social actors highlighted by family farmers were municipal and state schools, EMATER and municipal nutritionists. The absence of connection between the Union and the PNAE was verified, since, according to reports from family farmers, this institutional leadership only assists in the legal means of the property, with documentation and social security. There is the CAE, but the members are not active. The products purchased in the biannual



public call notice that the schools make and that the family farmers deliver weekly according to the schedule stipulated by the schools, are fruits, vegetables, legumes and beans. The articulations, negotiations, agreements and information concentrate on the main actors, school and EMATER, which direct family farmers in the PNAE implementation network. Family farmers in the municipality showed that they are dependent on EMATER's guidance throughout the PNAE operation process. Therefore, the information that reaches family farmers comes largely from these social actors through personal contact, conversations and visits to their properties. In other words, all doubts coming from family farmers are resolved with EMATER and schools.

In the municipality of Mercês, MG, the family farmers emphasized the following social actors, municipal and state school, EMATER, municipal nutritionist and that, despite the existence of the Union in the municipality, the absence of this leadership in the process of implementing the PNAE was evidenced. The CAE, on the other hand, is active in this network, which has the participation of members and family farmers in the supervision and suggestion in the purchase of food for schools. Points that draw attention are that two family farmers are from the Quilombola community in the municipality, and that six of the family farmers are investing and innovating in their plantations to offer differentiated products to schools, such as the production of strawberries, açaí and tomatoes produced in greenhouses. The family farmers of this municipality have shown to be participative and active in the process of the PNAE implementation network, as they are always in contact with EMATER and the schools, charge on the public call notices, negotiate directly the issue of the prices paid to their products.

Orizânia, MG, the family farmers presented as social actors the municipal and state school, the Union, EMATER and the municipal nutritionist, in addition to the School Feeding Council (CAE) that are part of the PNAE implementation process. It is worth mentioning that the role of the Union in this municipality was emphasized by family farmers as fundamental for the effectiveness of the program, showing that the president of the Union encourages and assists family farmers throughout the process, in addition to being part as a member of the CAE, inspecting and monitoring the purchases of school meals. As of 2021, EMATER did not actively participate in the PNAE implementation process, but assisted family farmers in the municipality. Family farmers reported that they provided the following foods to schools: fruits, vegetables and legumes. These foods were purchased in the public notice held every six months in the municipality, which were provided by family farmers hired by the schools through the delivery schedule delivered to them. The articulations, negotiations, agreements and information occurred through the interactions of the aforementioned social actors who use meetings, conversations and personal and virtual communication (WhatsApp) that aim to resolve the issues established for the operationalization of the PNAE.



In Rio Novo, MG, the social actors highlighted by family farmers were municipal and state schools, EMATER, municipal nutritionists and CAE. Only the Union, as an institutional leader, was absent from the process of the PNAE implementation network. According to family farmers, they supplied schools with fruits, vegetables, tubers and beans, which were part of the municipality's school meals. The family farmers showed proactivity and participation in the articulations, negotiations and, according to the Institutional Leaders of the municipality, as proven in the interviews collected, a partnership of family farmers together with EMATER established for years in the municipality was highlighted. Interactions between social actors occur through meetings, conversations, meetings, personal and virtual communication through WhatsApp, which are considered necessary mechanisms for the process of the PNAE implementation network.

In the municipality of Volta Grande, MG, as reported by the family farmer, the network is aligned with the following social actors: municipal and state schools, EMATER, municipal nutritionists and that, despite the existence of the Union in the municipality, the absence of this institutional leadership in the process of implementing the PNAE was verified. Volta Grande, MG, was a municipality that had to seek the participation of family farmers in another municipality to deliver food to their schools, both municipal and state. The food supplied to schools is provided by family farmers in the municipality of São Domingos, a neighboring municipality. The schools make a public call notice every six months, with regular weekly deliveries made by family farmers of the foods specified in the notices, such as fruits, vegetables, legumes, vegetables and rice, which have been introduced in school meals. Family farmers are proactive and participatory; however, the articulations, negotiations, agreements and information in the context of the PNAE implementation process depend on the interactions with social actors mentioned above, in particular, EMATER, which makes this connection between the municipalities of Volta Grande and São Domingos. These interactions occur through personal contact, meetings, whatsapp and conversations, thus creating an essential mechanism for the implementation of the institutional purchase of food in the municipality.

According to the above syntheses and the reports presented in all the studies, it was found in the seven municipalities studied that the PNAE implementation network is a continuous learning process among all those involved and that, although the legislation is the same for the whole country, each municipality has different particularities in its implementation network; that is, Each municipality has its own specificity within the process of the program's implementation network. In addition, the articulations, negotiations, agreements, dialogues and information that circulate in the context of the interaction networks of the actors involved in the implementation process are essential to establish personal and social relationships, providing security to family farmers to participate in the PNAE. Thus, it can be seen that the PNAE is a complex program that involves several social actors (municipal education department, EMATER, schools, family farmers, associations, among



others), who must work together in partnership so that the public policy is implemented (Triches; Schneider, 2010; Villar *et al.*, 2013), contributing to the strengthening of local policy and sustainable development (Triches; Schneider, 2010).

In the context of the **practices** developed by family farmers, in the seven municipalities studied, with regard to the process of implementation of the PNAE, social practice in its operational and social dimension were highlighted. The **Operational Practice** focuses on the specific steps and processes involved in the implementation of the program, as emphasized in the following terms: **deliver, sell, price, food, difficulty, invoice, DAP, bidding, schedule, documentation, payment, among others**, which were addressed in the previous topic when highlighting the stages of the PNAE. Family farmers express the need for greater dissemination and clarification of the steps and procedures involved in the implementation of the PNAE, as verbalized: "sometimes *there is a lack of greater disclosure of this (PNAE), so that we are aware of all the stages*" (AF-29); "*I don't know how this school process works*" (AF-18); which "*limits people's participation*" (AF-07). Thus, it is inferred that the lack of knowledge about how the PNAE works may limit the effective participation of other family farmers in the program, indicating the importance of training and awareness programs for family farmers in order to improve their understanding and facilitate their participation in the PNAE, ensuring that the program achieves its objectives of supporting family farming and providing quality food in schools.

With regard to Social Practices, family farmers use a series of terms to describe their experiences and approaches in relation to the PNAE, such as: **advice, manner, experience, agreement/negotiation, practical, conversation, custom, past, conviviality, history, culture, among others**, as reported below:

I remember my father and mother planting it this way and it worked, and I really like to follow my parents' advice, and these are the products that I deliver to schools. (AF-18)

Everyone has their own way of doing it, my habit of planting is like that and it has worked so far. (AF-53)

at EMATER and school meetings, we sit down, chat, exchange ideas, exchange information, exchange knowledge, know how much a chicken costs, how much a pig costs. (AF-48)

These terms refer to the "habitus" of family farmers within the structures available in the context of their social practices, experienced by them in the process of implementing the PNAE, which are guided by the relationships they build (Freitas, 2017). In the view of Giddens (1984), social practices involve interactions carried out by social actors (in this case, family farmers) through various activities, and that these interactions are shaped by beliefs, values, knowledge and behaviors, which influence the way family farmers act in specific groups or communities, depending on the context in which they find themselves.



These terms confirm what Bourdieu (1990) and Giddens (1984) address when they state that "habitus" and "structure" influence the way actors think, feel and act, shaping their responses to the pressures and demands of the social context in which they live, as can be evidenced in the following reports:

social relationship is more expressive, because in living together it ends up creating other feelings within people [...] it transforms the person who is participating [...] it generates friendship inside, there is some advice. (AF-03)

We make a decision to adjust some agreements, in terms of delivery, price. (AF-07)

But we come to an agreement, talking, chatting and making things right. (AF-17)

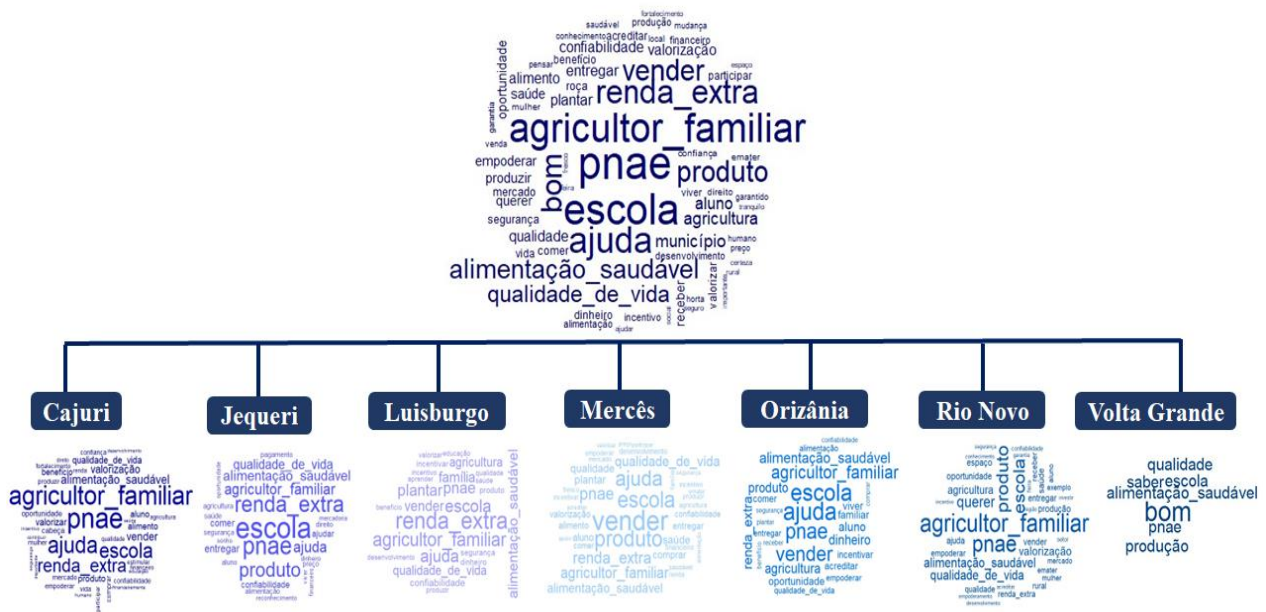
In this sense, it can be inferred that the combination of the perspectives of Bourdieu (1990), Giddens (1984) and Portugal (2006), through social practices, helps to explain how social structures affect the individual actions and perceptions of actors in the context of the PNAE and how people, based on their habitus, contribute to the reproduction or transformation of these social structures over time. impacting the PNAE's social networks, as the interactions between the program's actors can bring new configurations to the social structure, such as, for example, partnerships between schools, local family farmers and government agencies, which can create networks that promote sustainability, the quality of school feeding and the development of the region.

CONTRIBUTIONS AND CHALLENGES OF THE PNAE AS A PUBLIC POLICY FOR DEVELOPMENT

The PNAE is an important public policy in Brazil, which aims to provide adequate and healthy food for students in the public school system, in addition to strengthening family farming, also seeking the personal, social and economic development of the country. In this sense, it seeks to identify the contributions that PNAE makes to local and regional development, as well as the main challenges faced by PNAE, as a public policy, in the perception of family farmers in the seven municipalities of the Zona da Mata region of Minas Gerais.

In the set of analyses of the perceptions of family farmers, some contributions achieved in the process of implementation of the PNAE were identified, as shown in Figure 5.

Figure 5 – Word clouds with the contributions of the PNAE, according to the perception of family farmers in the Zona da Mata of Minas Gerais



Source: Survey Data (2023).

It is observed that, in most of the municipalities surveyed, family farmers highlighted the terms **"extra income", "school", "help", "healthy food", "quality of life", "appreciation", "opportunity", "sell" and "product"**, as a contribution of the PNAE, which they perceive, according to the following statements:

The PNAE helps people grow in life, it is an opportunity, a better help that stimulates us to a service where we see what I have planted and see the result. (AF-06)

It helps me plant and sell it to the school, and know that I will receive it too. It's a guaranteed sale, the money in your pocket. (AF-14)

The PNAE contributes to the commercialization of our work. It helps, because it's something that instead of buying from the middlemen of the markets. To give the opportunity, for the people of the municipality to have an extra income, they don't need to go abroad. (AF-31)

Yes, it contributes to the quality of life for the family farmer, for schools, for the municipality, and for economic development. (AF-50)

It contributes to us, because it gives us the security of selling my product and receiving it, this is a reliability that PNAE gives me. (AF-53)

The testimonies of the family farmers, mentioned above, refer to the internalized patterns of behavior, thought and values that shape the daily practices of this social group, perceiving the importance of the PNAE in their lives. By highlighting the contribution of the PNAE to "extra income", "guaranteed sale" and "commercialization of work", family farmers reinforce that the structure of the program provides them with direct economic opportunities, replacing the purchase of intermediaries. On the other hand, the terms "healthy eating", "quality of life" and "economic



development" reflect how the structure of the PNAE, by requiring the purchase of local and fresh products, positively impacts not only family farmers, but also schools and the municipality. In this way, the "habitus" and "structure" approaches help to understand how family farmers internalize and respond to PNAE practices, while the program structure, influenced by public policies, provides economic opportunities and contributes to positive social changes in farming communities.

In this sense, the above reports confirm that family farmers have a positive perception of the PNAE, demonstrating several reasons why they participate in the program and the contributions generated in the process of implementing the PNAE, such as **market stability, increased income and improvements in quality of life**. For family farmers, the PNAE provides a stable source of income for them, guaranteeing the purchase of their products. This extra income helps reduce the financial uncertainty that many family farmers face, and with increased income, they can invest in their farming operations, improving infrastructure, acquiring better equipment, and consequently improving living conditions for their families.

In addition to these contributions, in the view of family farmers, the PNAE also contributes to the **diversification of culture, appreciation of family farming and local development**, as corroborated in the statement of the family farmer, "I think that the program helps in the development of both human and social development in the agriculture sector. Undoubtedly, we encourage more people to *plant other things, other crops to serve the schools. We feel more valued*" (AF-32).

In the reading of family farmers, the PNAE also contributes to **ensuring healthy food for school students and to promoting food education**, by encouraging healthy habits from childhood, thus contributing to the cognitive development of students, to learning, to better school performance, in addition to the prevention of food-related diseases. Such as, for example, malnutrition, as can be observed in the reports of family farmers: "*Today I see that the boys value the garden much more [...] the girl is eating, a banana that came from here from the farmer next to her house*" (AF-07); they perceive the issue of food education by emphasizing that "*the child starts at the beginning that he goes to school to get used to eating vegetables, something that he often does not eat at home. This, in general, values the agriculture of the municipality and helps in the health of the child*" (AF-48); and "*encourages the student to eat vegetables, okra, because he is seeing what the other is eating. It is a dietary re-education*" (AF-14).

Therefore, the PNAE can, in fact, represent an instrument of well-being for family farmers, contributing to improvements in their living conditions. These contributions of the PNAE can be summarized in some main points, such as: market stability, increased income, improvement in quality of life, improvement in school feeding; encouragement of family farming; crop diversification; valuing family farming, promoting food education; and local and regional



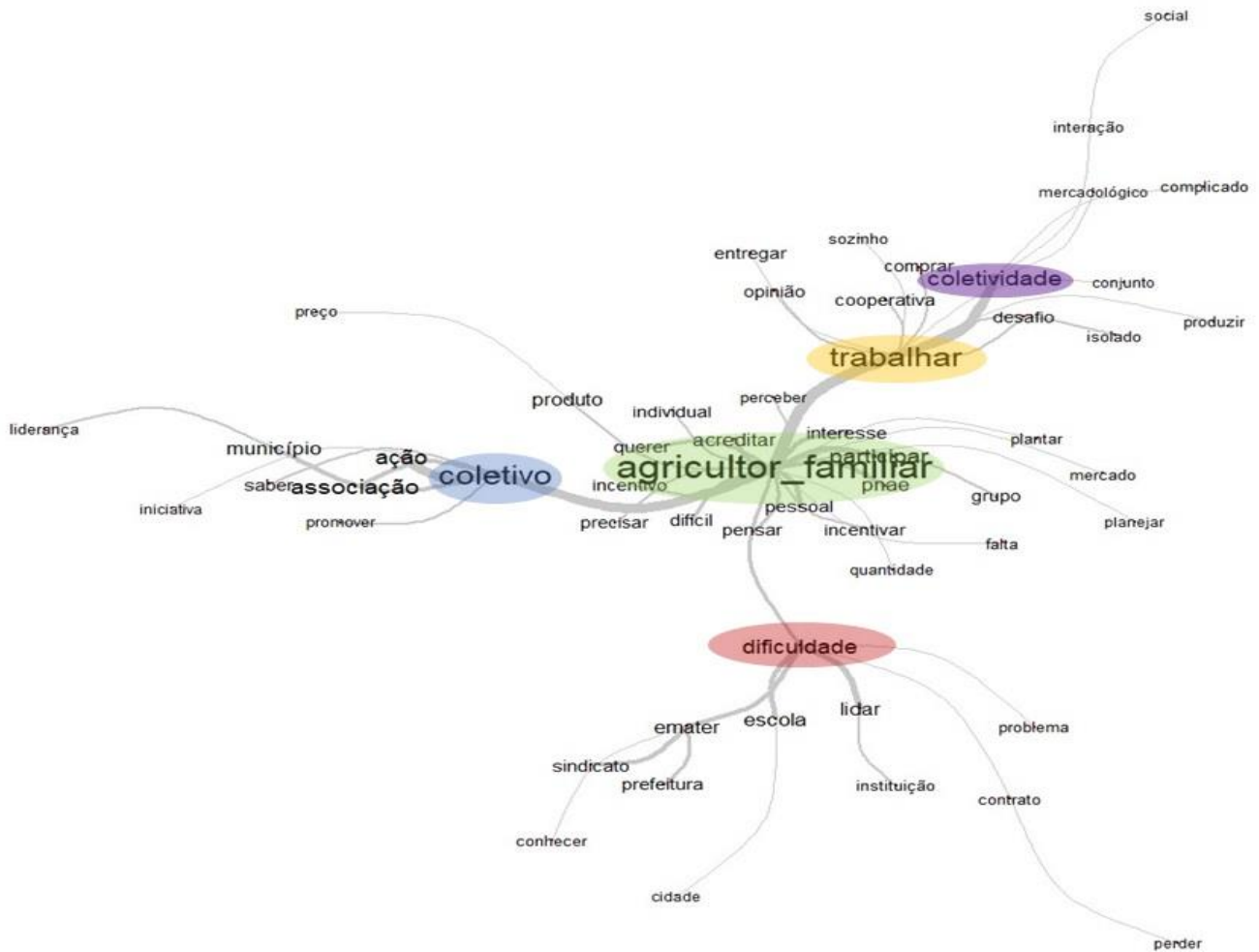
development. These points, highlighted by family farmers from the seven municipalities of the Zona da Mata region of Minas Gerais, show both personal and social development.

However, this effectiveness of the PNAE depends on adequate implementation and a favorable environment, since the program implementation process may vary from region to region and according to the way the program is implemented, and in some areas, challenges may occur, as can be seen in Figure 6.

It was possible to perceive the coherence and connection existing in the analysis of similarity (Figure 6), which presented a set of elements that expressed the challenges and difficulties of family farmers in the seven municipalities studied in the Zona da Mata of Minas Gerais. The Similitude Analysis presented a ramification of the main terms listed by the IRaMuTeQ software, which showed five words, **"family farmer"**, **"work"**, **"collectivity"**, **"collective"** and **"difficulty"**, which were related and hierarchized with other elements, to a greater and/or lesser extent, depending on their location on the map: central or peripheral. In reference to the word **"family farmer"**, **the word "work" is anchored in a direct and very close way**, which together are sub-anchored in other terms, such as: **"collectivity"**, **"collective"** and **"difficulty"**; In other words, there are several dimensions manifested here, such as, for example, the difficulty of family farmers in working collectively and not perceiving the collectivity of the agricultural community, especially in the context of the PNAE.

The term **"family farmer"**, in the analysis of similarity, has four strong links that also occupied a certain space of centrality, such as: **"want"**, **"interest"**, **"participate"** and **"PNAE"**. These five terms incorporated, in the perception of family farmers, the perceived challenge of the lack of interest of family farmers in participating in the PNAE process, according to testimonies, *"I see the difficulty of people being more interested in organizing these things for school [...] there is a lack of interest on the part of the staff in participating in the PNAE"* (AF-31). Thus, the challenge of most municipalities *"would be the lack of product for schools to buy, the lack of interest of the farmer in participating, of wanting to plant, to be able to deliver it to the school"* (AF-42).

Figure 6 – Analysis of the similarity of the challenges and difficulties of the PNAE, from the point of view of family farmers in the Zona da Mata of Minas Gerais



Source: Survey Data (2023).

In this context, the lack of interest of family farmers in participating in the PNAE can be interpreted as an expression of the "habitus"; that is, an internalized predisposition that influences their actions and that is associated with the social structures that shape their actions and decisions. Thus, the mention of the "lack of product for schools to buy" and the "lack of interest of the farmer in participating" points to structural factors, such as the availability of agricultural products, which influence participation in the program and the organization of the process. Thus, the challenges mentioned, such as the difficulty of organization and the lack of product for the schools, point to structural barriers, which limit participation in the PNAE. These challenges are reflections of the broader social and economic conditions that shape the practices of family farmers.

The terms "work" and "collectivity" were also highlighted, which are connected with other elements, such as "isolated", "alone", "challenge", "produce", "cooperative", "interaction", "market", "complicated" that were present in the statements of family farmers:

I think farmers like to work more isolated, we like to work more alone. (AF-47)



In my opinion, the problem is the lack of awareness of the family farmer to seek knowledge to work in the collectivity, to seek to form a cooperative to participate in the program here and in another city. (AF-05)

Both in marketing issues, in interaction, in the financial situation are complicated things for the farmer, this makes it very difficult for us to produce more to meet the demands of the school, this is what I see as a challenge/problem. (AF-36)

If we were able to work collectively, we would be able to buy cheaper raw materials, and we would get the cooperative, for example, and better serve the schools/PNAE. (AF-03)

The terms mentioned above also connect with the term **"collective"**, which is combined with six other elements, such as **"action"**, **"association"**, **"municipality"**, **"promote"**, **"initiative"** and **"leadership"**. From the point of view of family farmers, the challenge of collective action aimed at creating a cooperative or association is perceived. It is noteworthy that of the seven municipalities surveyed, only one municipality is characterized in the group of legal DAP; that is, family farmers who belong to an association. Therefore, in the other municipalities, family farmers understand that these terms represent the difficulties of meeting the demands of the PNAE, as proven in the following reports:

If working on this issue of the collective would help with market issues, we would buy and deliver the products in case we had an association. (AF-02)

I believe that there are some difficulties in dealing with the association in the municipality, the farmers are individualistic, they need to have a lecture, who knows, maybe the municipality promotes something that awakens the leadership here. (AF-48)

I think that very little that the municipality has been seeking this type of discussion, leadership or collective initiative, this would be very good for us to improve our sale of products to schools. (AF-30)

The aforementioned challenges were pointed out in the studies of Freitas (2017), Cardoso *et al.* (2021), Valadares *et al.* (2022) and Harold *et al.* (2023) by highlighting the lack of interest of family farmers in joining the PNAE, the difficulties in offering family farming products to schools, the market barriers, and the challenges for cooperativism in Brazil. In addition to these challenges, it is important to highlight three more difficulties reported by family farmers, which would be the bureaucracy involved in the PNAE process, the delay in public calls and the issue of logistics and access, as proven in the testimonies of family farmers, presented below:

To be able to mess with the paperwork, with the bureaucratic part is horrible. Everyone knows how to work in the fields, plant vegetables, but no one knows how to work with a computer, take a note, enter a system, this is a challenge for us, it is even easier to participate in the PNAE. (AF-04)

The biggest problem with PNAE is the call that is delayed. The public call that is delayed, could be in February. It could be before, that then you make a proper schedule with the products here to plant. (AF-02)



The challenge is at a distance, where we live is far away. Just like I told EMATER to get out of here and go to school to take it is difficult. Very far. There's the issue of cost, right? If I think so, a cabbage I take to school doesn't pay for gas. (AF-20)

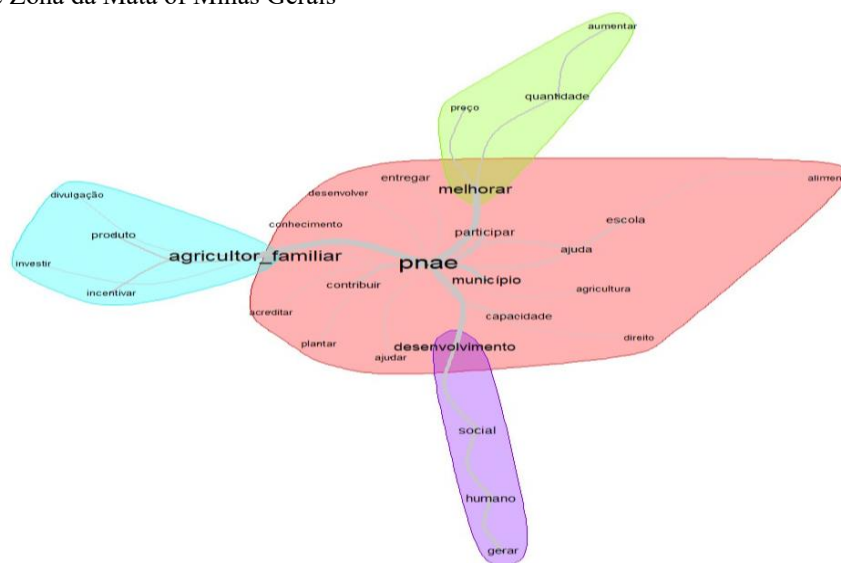
what I complain about the PNAE and see as a difficulty is the issue of roads that are bad for us to deliver our product, the city hall could fix it, this would help us a lot, we would use less oil. (AF-52)

In the reading of family farmers, these are the challenges and difficulties they face on a daily basis when participating in the delivery of their food to schools, in the context of the PNAE. These barriers presented by family farmers reinforce the importance of well-structured action and articulation between the actors involved in the process of implementing the program, which favor the achievement of the objectives of the PNAE. According to Freitas (2017), it is important to consider local challenges as fundamental elements in the implementation of public policies, and that these challenges may include issues related to communication, infrastructure, local social condition, and the connections and partnerships established. This means that the local context cannot be seen only as secondary aspects, but as an essential element for understanding the process of implementing public policies. Thus, it is important that the policy is constantly evaluated and improved to meet the needs of those involved.

Thus, the contributions and challenges perceived by family farmers in participating in the PNAE are important and have significant impacts on the promotion of family farming and on personal, social, economic, local and regional development, according to information highlighted in Figure 37, which presents an analysis of similarity, with four different groups: it can be seen that the term "**PNAE**", specifically, in the pink group, it appears in the centrality of the image, in a strong relationship, in turn, with "**family farmer**", "**improve**" and "**development**", terms that once again highlight the perception of family farmers about the subsidies that the PNAE generates for the personal and social development of the municipalities studied.

With regard to the term "**family farmer**", In the light blue group, it highlights the importance of the government in encouraging, disseminating and investing in the family farming sector, so that family farmers can produce more to serve local schools and those in the region. On the other hand, in the green color group, relative to the term "**improve**", The issue of improving the price and increasing the quantity of products purchased from family farmers is highlighted, and consequently providing subsidies to improve the living conditions and quality of life of family farmers. Now the grouping of the term "**PNAE**" Nurtures connections with words "**municipality**", "**school**", "**agriculture**", "**participate**", "**help**", "**contribute**", "**develop**", "**knowledge**", "**capacity**" and "**right**", characterizing a fundamental aspect of the program that aims to foster local and regional development, through the process of acquiring products from family farming in the municipality for schools.

Figure 37 – Synthesis of the contributions and challenges of the PNAE as actions for development, in the perception of family farmers in the Zona da Mata of Minas Gerais



Source: Survey Data (2023).

With regard to the term "**Development**", highlighted in the purple group, the words "**social**", "**human**" and "**generate**" stand out, terms linked to the group of the term "PNAE", which allows us to infer that the PNAE has contributed significantly in several dimensions of development, including human, social, economic, local and regional. As for **Human Development**, it was evidenced that the PNAE contributes by providing nutritious meals for students, helping to improve the health and well-being of children and adolescents, positively impacting cognitive development, academic performance and school attendance. In **Social Development**, the program promotes social inclusion by ensuring that all students have access to adequate meals, regardless of their economic situation, in addition to the inclusion of food from family farming, thus contributing to the reduction of social inequalities. In **Economic Development**, the PNAE contributes when it involves the purchase of food from local family farmers, boosting the rural economy and strengthening family farming, by creating employment and income opportunities in rural areas. In addition, **Local and Regional Development** occurs by purchasing food from family farmers; that is, the PNAE helps to strengthen local and regional economies, reducing dependence on food imports and benefiting rural communities, in addition to contributing to improving the quality of school meals, promoting food and nutritional security for students in public schools in Brazil.

In the perception of family farmers, the PNAE has contributed significantly to their development, that of the students and of the municipality itself, because, by providing their food products to the schools, there is income generation, stability for their families and the recognition of their work. These points were reported by family farmers, when they said:

I see that there is appreciation for my product, we have money coming in, so the quality of life has improved, I feel empowered, this feeling that you are growing in life. (AF-05)



I believe that the PNAE promotes the human and social development of the agriculture sector and the region, yes. It encourages the family farmer to plant more, to work, to produce more, [...] it encourages the family farmer to stay in the countryside. It is an alternative for the family farmer to produce and have a place to sell. It has a market for the family farmer. (AF-05)

I see that the PNAE is an appreciation of my work, I am happy to see the students eat a type of vegetable that came from my work, then these boys become strong, and grow healthy. (AF-14)

The program is very good, it helps the school with fresh food for the students, it generates savings for the municipality, it generates income, for the family farmer a better quality of life for the family, we start to sell and have a greater guarantee of income. (AF-48)

The testimonies of family farmers indicate a very positive view of the PNAE, which is related to the following points: recognition and trust in the program; encouragement of family farming; valuing work, economic benefits, and personal and social development. In other words, the PNAE not only provides fresh food for schools, but also generates savings for municipalities and income for family farmers, being seen as an initiative that promotes personal and social development, both in the agricultural sector and in the region in general, generating income, improving the quality of life of rural families and strengthening the local economy.

Another indicator, as a proxy for personal and social development, was the feeling of empowerment of family farmers verbalized at various moments of the interviews, as they felt in control of their lives, confident, autonomous and capable of facing challenges. These points are proven in the reports of family farmers when they affirm that empowerment is: "*becoming safer to make decisions*" (AF-03); "*be able to be recognized*" (AF-14); "*to have my financial freedom and to develop more*" (AF-35); and "*to be able to make a decision, to be free*" (AF-15). It is important to note that empowerment is not only a result of personal, human and social development, but also a means to achieve it, which contributes to the growth and evolution of people. For Wammes, Pastório and Roesler (2013), promoting the empowerment of social actors is an important strategy to improve personal and social development in rural areas and family farming.

For Sen (2000), development goes beyond economic growth and per capita income, emphasizing the importance of individual freedom and the ability to make choices as fundamental aspects of personal and human development. Thus, regarding the process of implementation of the PNAE and its relationship with family farmers, it can be inferred that, if these family farmers had the freedom, capacity and means to make choices and actively participate in the program, this may have contributed to their greater empowerment and improved quality of life. In this way, participation in the PNAE can represent an opportunity for family farmers to sell agricultural products to schools, which, in turn, can improve their living conditions, generate income and economic stability.



However, it is important to remember that the reality can be more complex, and the ability to make choices and achieve a satisfying life can be influenced by a variety of factors, such as access to resources, infrastructure, education, and public policies. Not all family farmers can have equal opportunities in the context of the PNAE, and it is important that public policies take these inequalities into account and work to ensure equal opportunities and development for all.

In this sense, the study by Teo *et al.* (2020) can contribute by providing elements that indicate the importance of the PNAE in promoting local development and favorable social opportunities for family farmers, schools, students, communities and municipalities, generating new social opportunities and contributing to local and regional development.

Therefore, it can be inferred that the PNAE is an initiative that goes beyond providing food for schools, as it has significant economic and social impacts, promoting personal, human and social development and contributing to the education and well-being of students in the public school system in Brazil.

FINAL THOUGHTS

The purpose of this article was to identify the profile, limits, possibilities of action and empowerment of each social actor in the implementation of the PNAE, focusing on personal and social development, considering the operationalization of the PNAE, in the light of the Theories of Social Networks, Theory of Social Practice and Development.

The results showed that family farmers are aware of the importance of their role in the implementation of the PNAE, and recognize their contribution to food and nutritional security in schools, being willing to take measures to ensure that the food offered meets the quality standards established by the PNAE. In addition to the positive perception of family farmers of their responsibilities and contributions to guarantee food to schools, the importance of the support of institutional leaders in the process of implementing the PNAE was also highlighted, highlighting the connection between family farmers, schools and EMATER.

It is interesting to note that family farmers, when interacting in the PNAE's social networks, can adapt their actions and perceptions according to their "habitus", shaping their behaviors based on the structure in which they are inserted. In other words, it is through social practices and interactions between the different actors of the program that new configurations occur in the social structure, and the formation of partnerships between stakeholders, such as schools, family farmers and government agencies, is seen as a means to create social networks that promote the quality of school feeding and contribute to the strengthening of family farming and local and regional development.

For most family farmers, the PNAE is an initiative that goes beyond providing food for schools, as it has significant economic and social impacts on their lives, highlighting as the main



contributions of the program market stability, increased income, improvement in quality of life, improvement of school feeding; the encouragement of family farming; crop diversification; the valorization of family farming, the promotion of food education; as well as local and regional development.

However, it is in the course of the dynamics, interactions, and social practices involved in the social network of the PNAE implementation process that challenges, difficulties, and barriers occur, as demonstrated by the majority of family farmers surveyed. They listed the following bottlenecks as challenges encountered in the PNAE implementation process: excessive bureaucracy involved in the PNAE process, delay in public calls, logistics and access issues, lack of interest of family farmers in participating in the PNAE, difficulties in offering differentiated products to schools and the barrier to the creation of cooperatives and associations.

The limitations presented by family farmers reinforce the importance of well-structured action and articulation among the actors involved in the process of implementing the program, which favor the achievement of the objectives of the PNAE. In this way, the contributions and challenges perceived by family farmers in participating in the PNAE reinforce that they had the freedom, capacity and means to make choices and actively participate in the program, perceiving the improvement of their quality of life, in addition to understanding the challenges that they still need to solve.

Thus, it is important to recognize that the reality can be more complex and vary from region to region, and that the ability of family farmers to make choices and achieve success in this PNAE process can be influenced by several factors, such as access to resources, infrastructure, education, and public policies. It is recognized that not all family farmers can have equal opportunities in the context of the PNAE, and it is important that public policies take into account these inequalities and work to ensure equal opportunities and development for all.

Thus, it can be inferred that both for the Zona da Mata region of Minas Gerais, as well as in other regions of the country, the PNAE plays a significant role in combating hunger, encouraging family farming, improving the quality of school meals and stimulating education; By purchasing locally produced food, the program promotes economic and social development by creating markets for farmers in the region. This, in turn, can strengthen the local economy, improve the living conditions of rural communities, and at the same time promote personal, social, local, and regional development. However, there are challenges in implementing the program at the local level that need to be rethought and overcome in order to further advance the development of the region.



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