


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

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ABSTRACT

This article aimed to identify the limits, the 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 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 IRaMuTeQ software 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 PNAE's social networks 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 Extended 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 Education Development (2023), the PNAE plays a key 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 on several areas such as: the stimulus to 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 school networks, contributing to food security; the diversification of school feeding by purchasing food directly from family farmers, thus promoting a more diversified 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 relations 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 be analyzed only 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 the 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 the formation of the actions and strategies of social actors. The Network Theory, addressed by Portugal (2006), brings 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 on 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 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 determining 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 locally developed social practice, 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 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 of the municipalities of the Zona da Mata 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 development theories, 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 products from family farming 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 53⁵ interviewees from the seven selected municipalities belonging to the Zona da Mata region of Minas Gerais, who consented to⁶ be interviewed, who were identified as Family Farmers (FA). The semi-structured interview included 70 questions, which were divided into three blocks. Block 1 examined the government 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.

⁵ The 53 interviewees/family farmers who were hired by the schools to supply food to the PNAE in the municipalities surveyed were selected.

⁶ 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.

The analysis of the information collected from 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, with a focus 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, consisted of 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 terms. From this word ranking, 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.

When the analysis of **Block 3** was carried out, the collected data were organized in a Microsoft Office Excel spreadsheet and, later, were transported to the IRaMuTeQ, where the analysis was carried out through the Word Clouds, aiming to highlight relevant keywords/terms from the corpus of analysis of the interviews, about 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 in 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 answers to the interviews and, then, seven Word Clouds were generated, such as the answers of the respective selected municipalities in 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 Similarity was carried

out, which allowed 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

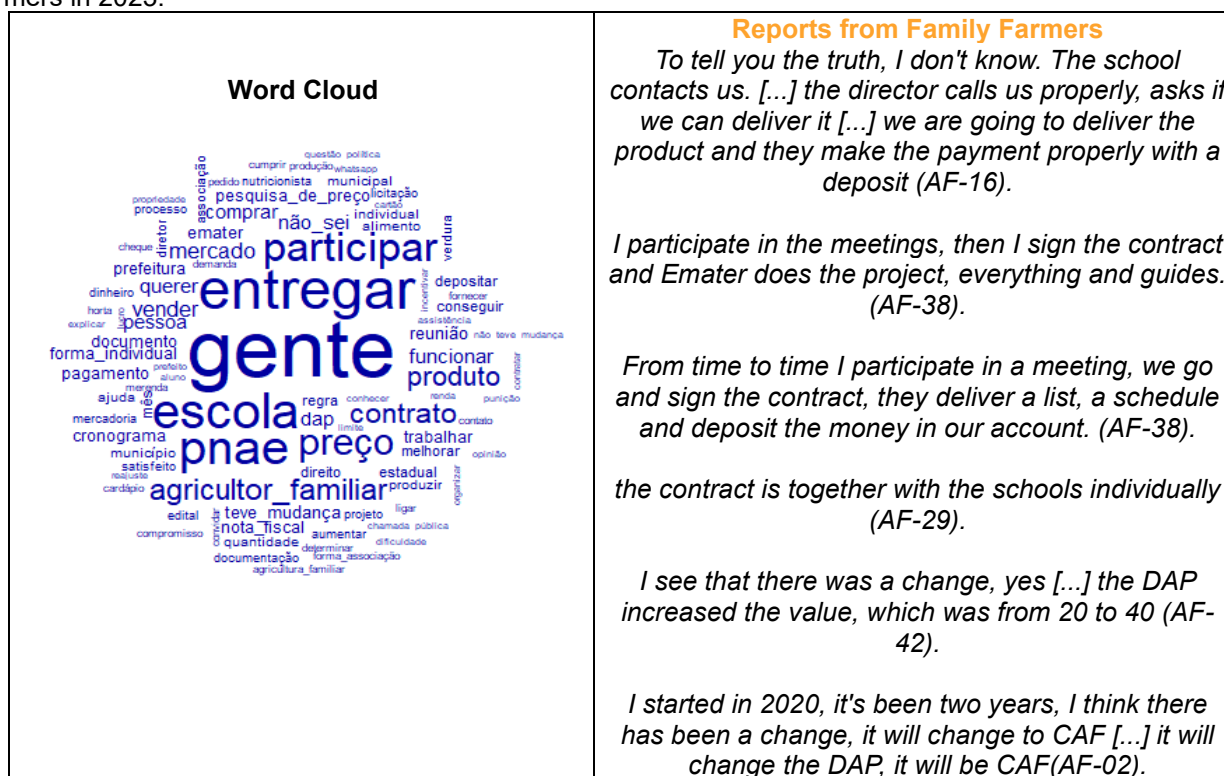
Based on the data analyzed, four points were organized for presentation and discussion, starting with the presentation of the Support of the Institutional Leaders involved in the Dynamics and Interaction of the implementation of the PNAE. Then, he addressed the Implications/Influences of Daily Practices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

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

To examine the dynamics and interaction of the implementation of the PNAE, in the perception of the interviewed family farmers, the analysis was carried out through 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, evidencing how they evaluate the management of the PNAE, as well as the contribution of their work to the achievement of food and nutritional 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, highlighting the partnership with EMATER, which helps in the organization of the documents, 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 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 standards for the PNAE implementation process. The term **"I don't know"** demonstrates that many of the family farmers are unable to fully understand the implementation of all the stages of the PNAE, as proven in the reports presented in Figure 1. In the municipalities of Cajuri, Jequeri, Luisburgo and Mercês, most 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 verbally stated that they knew and understood the stages of the PNAE.

Thus, the lack of knowledge or understanding of many family farmers about how the PNAE works implies that this fact may be due to the complexity of the program or 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

proven 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 disclose about the work of the PNAE, I don't even know, I think 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 the discussion of Valadares *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 their adherence to the program.

Another point that draws attention is that the lack of information and understanding inhibits the empowerment of family farmers in the PNAE process, as it is known that family farmers play 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 an active participant in the whole process. This implies its 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 during the entire stage of PNAE implementation.

It is observed that in the local context of interactions, due to the structure in which the social actors are inserted, the "habitus" internalized by them occur differently, 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 legitimation 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 regard to the terms **"meeting"**, **"EMATER"**, **"documentation"**, **"price survey"**, **"contract"**, **"schedule"**, **"invoice"**, **"payment"** and **"deposit"**, verbalized by the family farmers of the seven municipalities, it summarizes the PNAE stage, as proven in the

testimonies that *"They invite us to participate in these meetings of the Public Call (AF-29), that 'Emater organizes the documentation for us, does the project, sends it to the school' (AF-42), that the schools do 'the price research in the market and take it to make the bidding, and negotiate with us' (AF-29), that they sign 'the contract individually, and they give us the schedule to deliver and then have to issue an invoice (AF-49) and, finally, schools make the 'payment directly with a deposit in the bank or with a check, plus a deposit' (AF-16). These stages of the implementation of the PNAE were ratified in the works of Freitas and Freitas (2020), by highlighting the interaction and dynamics in the implementation of the PNAE locally.*

Another highlight within the word cloud are the terms **"there was change", "DAP", "increase", "price", "help", "individual form",** a group that 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 has been a change, that the PNAE has been maturing, with the issue of treatment with the family farmer himself, valuing the family farmer" (AF-48). They also report that "the DAP will change, the DAP will be the CAF" (AF-02), and that "the issue of the DAP has improved, which used to be only 20 thousand, is now 40" (AF-41), and that this is an additional incentive, which "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 of sale of family farmers for school meals from 20 thousand to a 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, *"DAP has increased, we can sell up to 40 thousand, this is good, it is more security and increases income a little more" (AF-13), in addition to "it is increasingly consolidating [...] and people see our work, they see that we take 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

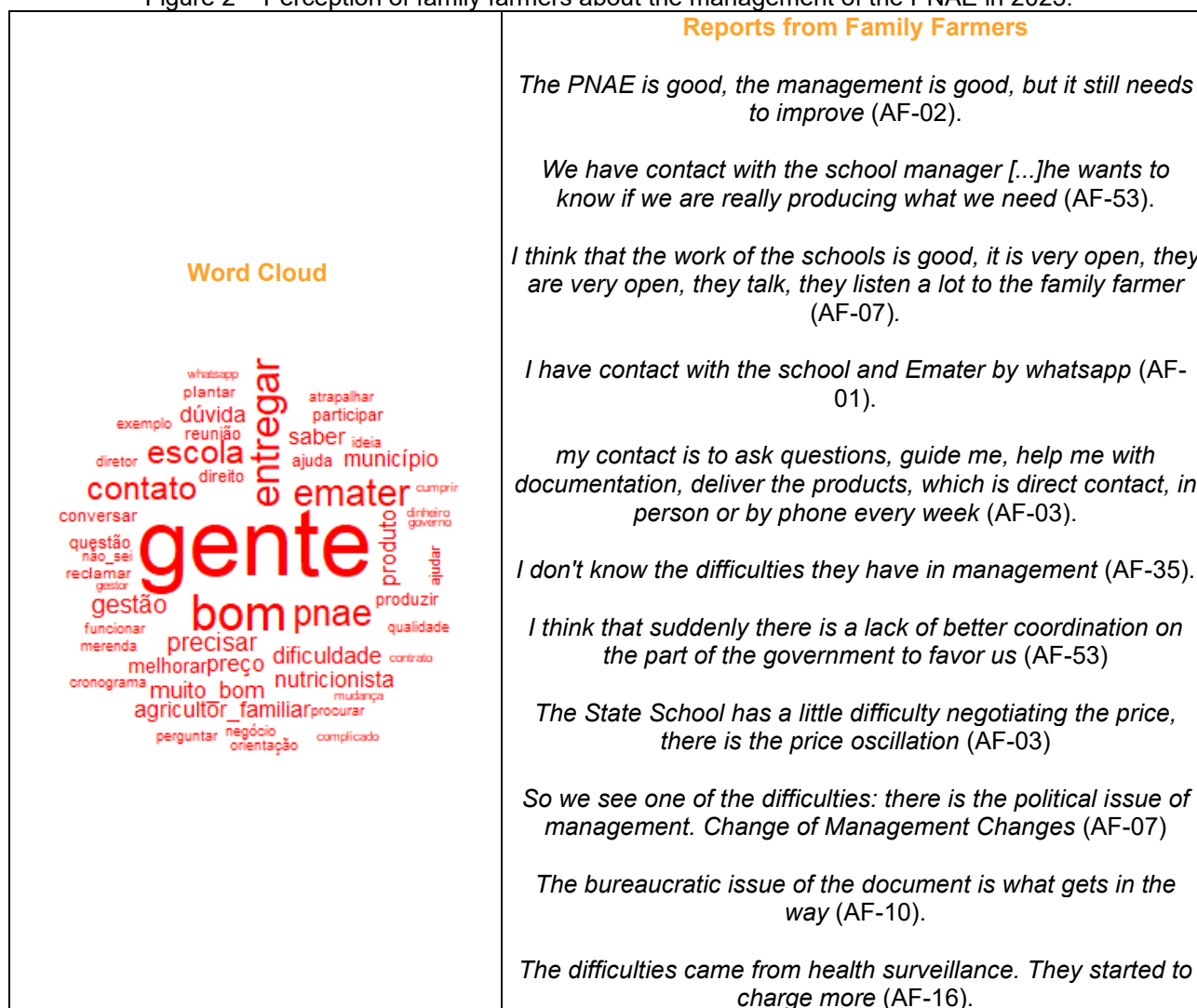
family farmers' access to public policies to support and encourage family agricultural production. This means that family farmers need to register with CAF in order to receive benefits and government support for their agricultural activities.

The Ordinance of the Minister of State for Agrarian Development and Family Agriculture No. 1, of February 7, 2023, came 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 benefits of the program. 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 works 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 the management of the PNAE, highlighting the form of contact and the difficulties that the managers have in the process of implementing the program.

It is observed, in the word cloud, 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 speech 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, good work" (AF-09), however, they emphasize that it needs to improve, that "the price issue needs to improve (AF-23), but family farmers realize that the management is trying to improve, as reported "we see that they are struggling to be able to improve (AF-41). Despite evaluating the management as good, 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 about the management of the PNAE in 2023.



Source: Survey data (2023).

The reports of 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 "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 again highlight the perception of family farmers about the contact they have with management in the PNAE implementation process. Family farmers reported that they get in *"contact with Emater and at school it is the nutritionist that I have more contact [...] 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*

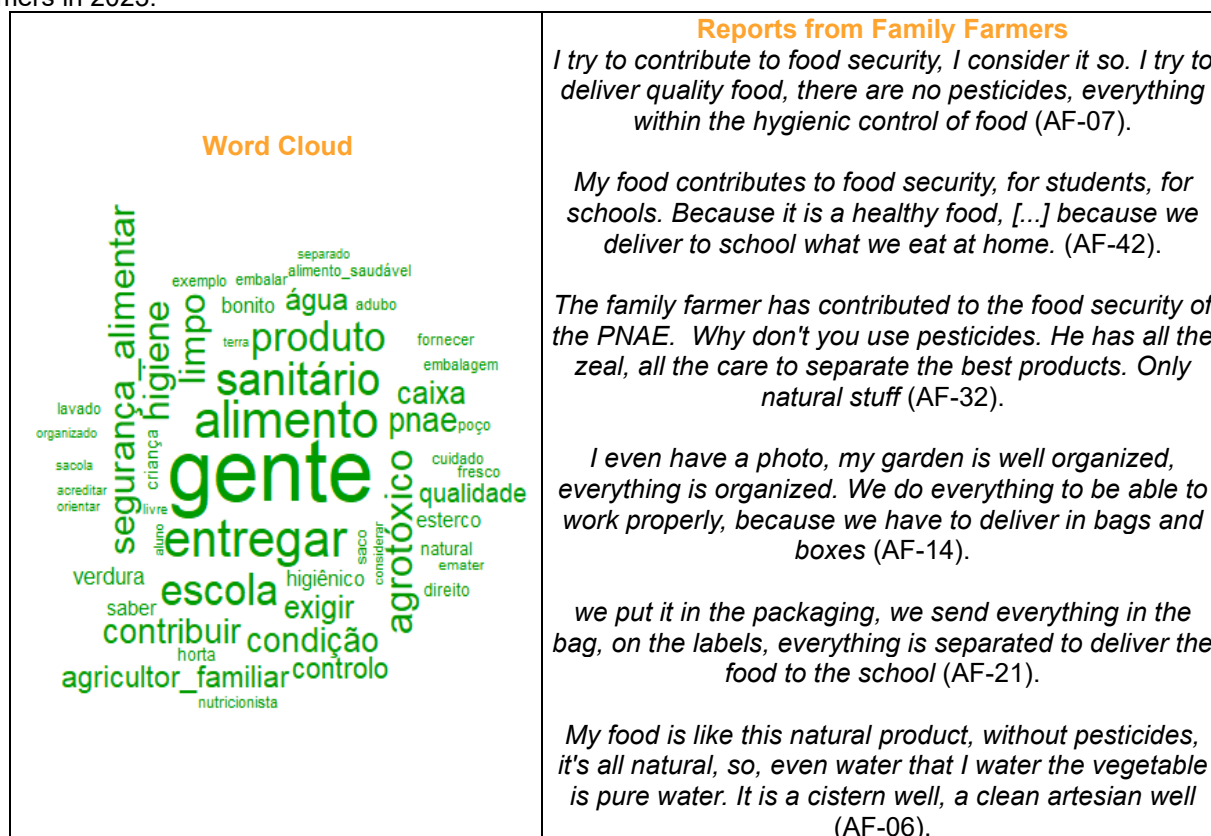
participate" (AF-32). The interactions and social relations of family farmers in the context of the PNAE, verbalized in the terms above, according to Giddens (2009), involve the rules and resources available to family farmers in their social practice. In other words, when family farmers seek contacts, 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 dispositions, 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, in the view of family farmers, in the seven municipalities surveyed, they have contributed to ensuring healthy food for students in public schools, as highlighted in Figure 3.

The terms **"people", "sanitary", "food", "deliver", "school", "demand", "control", "family farmer", "contribute", "hygiene" and "food security"**, show the promotion of Food and Nutrition Security, developed in the context of the PNAE. The close relationship between food security and the PNAE is an essential initiative to ensure that students have access to healthy and adequate food during their school day. 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 nutritional 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 socially vulnerable (Brasil, 2023). Thus, it is important to reinforce that the right to school meals is a public policy developed in many countries, including Brazil, where the FNDE has a fundamental role in promoting the food and nutritional security of 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 food security in the PNAE"* (AF-18), because *"they are natural products, without pesticides"* (AF-06), in addition to *"encouraging boys to sometimes eat vegetables and vegetables and fruit"* (AF-23).

Another aspect highlighted is the care with the delivery of food, verified in the terms **"washed", "clean", "organized", "bag", "box", "packaging" and "separated"**, which demonstrates the commitment of family farmers to ensure that food is within hygienic 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 [...] deliver everything organized"* (AF-48), *"everything very well arranged, clean, washed"* (AF-19), in the *"packages with transparent bags and labels"* (AF-12), and that he could not deliver the food in the *"wooden box, because now it has moved to a plastic box"* (AF-51). In the statements of family farmers, elements of the *"habitus"* related to family farming can be perceived, when they emphasize the production of natural foods, without pesticides, and 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 worrying about the quality of the food supplied 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 cannot irrigate the vegetables in the garden with water from the river"* (AF-07), *"advises that manure cannot be used in the garden bed"* (AF-18), and that *"we cannot throw any pesticides on the food in its production"* (AF-04).

Another point that draws attention is that references to terms such as "nutritionist", "EMATER" and guidelines on care in food production indicate the presence of institutional structures and norms that influence the practices of family farmers. Thus, 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 feeling of responsibility they have in ensuring that the food they provide 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 works of Abreu (2014), Freitas (2017) and Santos and Torres (2022).

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

To understand the implications and influences on daily 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 the PNAE Social Networks at the local level. To this end, the perspective of the Extended Theory of Social Networks was considered, 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 implementing the PNAE.

In this context, from the perspective of family farmers, it was addressed how they perceive the practical activities, the rules and the social networks that circulate the actions and relationships involved in the process of implementing the PNAE. 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** – We/Actors and the Ties; **Content - Instrumental** = Work, financial support, material 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 seen in Figure 34.

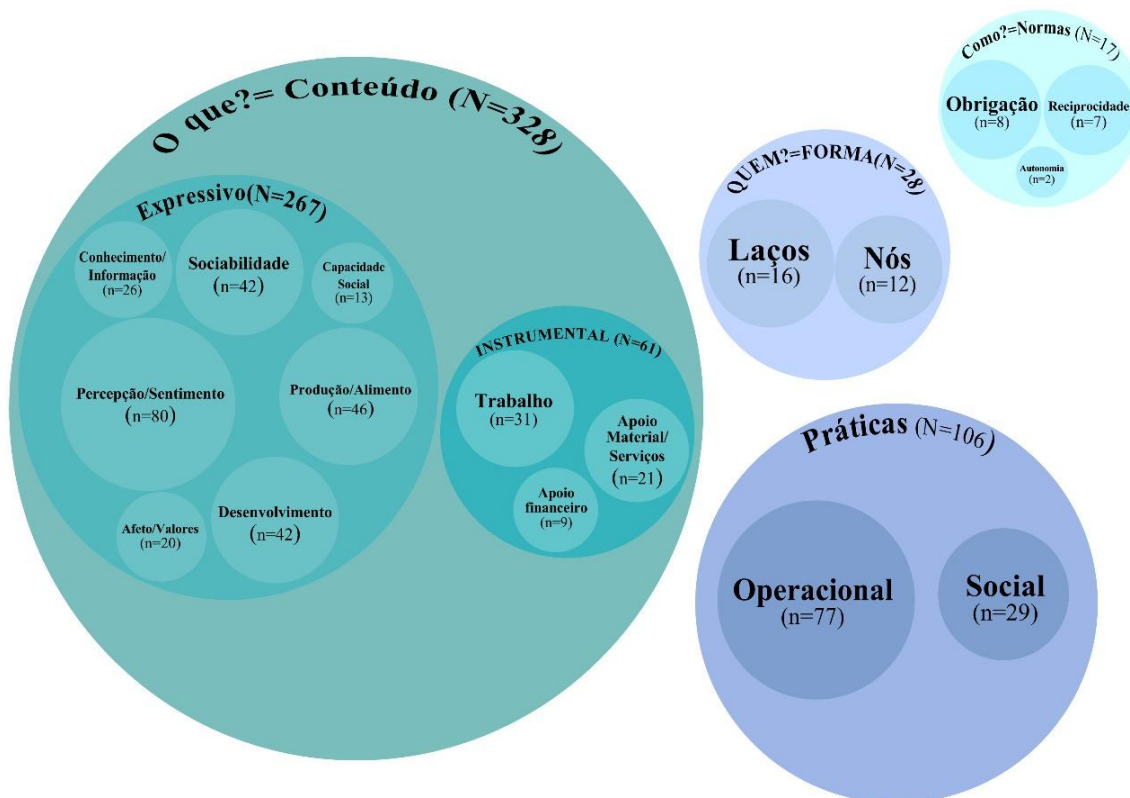
To understand the main points addressed, the **17 elements** were analyzed with a view to Social **Practices among the PNAE actors, focusing on "habitus" and "structure"** together with the **Operational Concepts of the PNAE Social Network** (Portugal, 2006), in view of the proximity between the subjects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

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 Knots/actors, namely: **Family Farmer, School, EMATER, City Hall, Union, Municipality, Nutritionist, Student, CAE, State, director and lunch lady, 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 too"* (AF-48) and the *"municipality itself"* (AF-09). Now, regarding the Union, 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 get 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 PNAE's social networks demonstrates their reflexive capacity to design the actions of other social actors, as a determining way in which 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 the institutionalized spaces is determined by the "habitus" and "structure" that make up their social context.

In this context, of the nodes of the networks linked to the PNAE process, the 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 school" (AF-29); "working

in the community is much more practical, because it helps with transportation to deliver our product to 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; in addition to 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** relate to the nature of relationships, with **positive ties** being characterized by actors who share common goals and interests, while **negative ties** involve differences and distinctions between the individuals or entities involved. Now, **active and passive ties** are based on the frequency and nature of interactions, since **active ties** involve regular and direct interactions, such as mutual aid, advice, support, and criticism; and on the other hand, **passive ties** do not involve everyday interactions, but are still important for individual and family security, as people know that they can rely on these ties 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, 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 goal of providing quality school meals (**positive**) contributing actively and constructively to the effectiveness of the PNAE. Now the **active ties** involve constant and collaborative interactions between these actors, who are engaged in the supply 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 deep compared to strong and active ties. However, these actors are available for support when needed, which makes them **passive bonds**.

Among the strong ties perceived by family farmers, it is important to emphasize 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 hugs... It embraces 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 works of the authors, Valadares *et al.* (2022) and Bastos *et al.* (2022), which 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 marketing, becoming an indispensable partner to mediate the entry of family farming into the PNAE, aiming to ensure operational and formal conditions to participate in the program*

Thus, it can be inferred that this analysis demonstrates the complexity of 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 commitment and ongoing cooperation between key actors. Weak ties also play an important role, as they broaden the support network 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), when they seek to understand these different types of ties that can help to 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 on the PNAE social network.

In the view of family farmers, the expressive content **of perception/feeling** that surrounds the daily practices in the process of implementing the PNAE 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 [...]. This is 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 collaborating 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 describing 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.

In the 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 cultivate, harvest, process and deliver their products, according to the requirements of the program (**meaning structure**), 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 darn effort to plant and deliver it to the school"* (AF-18). For this to occur, 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, in addition to 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, as a financial issue"* (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 operational process of the PNAE.

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 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's social network to adapt to local needs and the specific characteristics of each context.

Regarding the question 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 refer to what Portugal (2006) highlights: that the institutionalization of networks produces a set of norms and constructs meanings that guide the action of the 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 so necessary, 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, the family farmer's*" (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); that is, the relationship of reciprocity 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 the actors to define their relationship with the other actors in the context of the PNAE, this 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 family farmers, show how the program influences their relationships 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 be reproduced over time. In other words, the "habitus" influences people's actions, while social structures provide the context in which these actions occur and, within the scope of social practices, people shape their actions based on the structures they encounter in their daily lives.

Through the speeches 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 between the municipalities, as briefly described below:

In the municipality of Cajuri, MG, 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 recognizing that, despite the existence of the Union 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 department of Education, which is responsible for distribution to three municipal schools in the municipality. EMATER, in the view of 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 specifications of semiannual production, but with regular deliveries weekly stipulated in the schedule, delivered to each family farmer. They provide fruits, vegetables, legumes and tubers to schools. It is perceived that the information, articulations and negotiations for the purchase of food for school meals happen 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. Most family farmers depend on the instructions of EMATER and schools, evidencing the role of farmers as underlying, that is, they occupy a marginal role in the process of implementing the PNAE network. However, the family farmers of Cajuri emphasize their feelings with the interaction with the schools, such as help, reciprocity and obligation.

In Jequeri, MG, family farmers present municipal and state schools, EMATER and municipal nutritionist 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

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 department 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 speeches 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 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 via 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 found, because, 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 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 presented that they are dependent on EMATER's guidance in the entire process of PNAE operation. 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 the schools.

In the municipality of Mercês, MG, 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 inspection and suggestion in the purchase of food for schools. Points that draw attention is 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 participatory 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 of the CAE, inspecting and monitoring the purchases of school meals. EMATER, for political reasons, as of 2021, 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 of the public call held every six months in the municipality, which were provided by family farmers hired by the schools according to 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 in the process of the PNAE implementation network. According to family farmers, they provided schools with fruits, vegetables, legumes, tubers and beans, which were part of the municipality's school meals. Family farmers demonstrated proactivity and participation in articulations, negotiations and, according to the Institutional Leaders of the municipality, as proven in the interviews collected, a partnership of family farmers with EMATER established for years in the municipality stood out. Interactions between social actors occur through meetings, conversations, meetings, personal and virtual communication through WhatsApp, 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 school, EMATER,

municipal nutritionist 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 found. 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 provided for 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, greens and rice, which were introduced in school meals. Family farmers are proactive and participative; however, the articulations, negotiations, agreements and information in the context of the PNAE implementation process depends on the interactions with the aforementioned social actors, 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 summaries above 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 specificity within the process of the program implementation network. In addition, that the articulations, negotiations, agreements, dialogues and information that circulate in the context of the networks of interactions 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, the Social Practice in its operational and social dimension was 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 dissemination of this (PNAE), so we are aware of all the steps*" (AF-29); "*I don't know how this school process works*" (AF-18); which "*limits people's participation*" (AF-07). It is thus 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, way, experience, agreement/negotiation, practice, conversation, custom, past, conviviality, history, culture, among others**, as reported below:

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

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

in 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 the interaction 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 reach an agreement, talking, chatting and getting 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 the 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 implementing 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 contributes to people growing in life, it is an opportunity, a better help that stimulates us to a service that we see what I have planted and see the result. (AF-06)

It contributes to me planting and selling to school, and knowing 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 people's work. It helps, because it is 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 out. (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 me the security to sell my product and receive 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. Family farmers, when highlighting the contribution of the PNAE to "extra income", "guaranteed sale" and "commercialization of labor", reinforce that the structure of the program provides direct economic opportunities to them, replacing the purchase of intermediaries. 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 change in farming communities.

In this sense, the reports above 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 to 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 the crop, appreciation of family farming and local development**, as corroborated in the speech of the family farmer, "I think that the program helps in the human, social, and development of the agriculture sector. Undoubtedly, we encourage more 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 promoting food education**, by encouraging healthy habits from childhood, thus contributing to the cognitive development of students, for learning, for 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 when they point out that "*the child starts at the beginning when 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 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

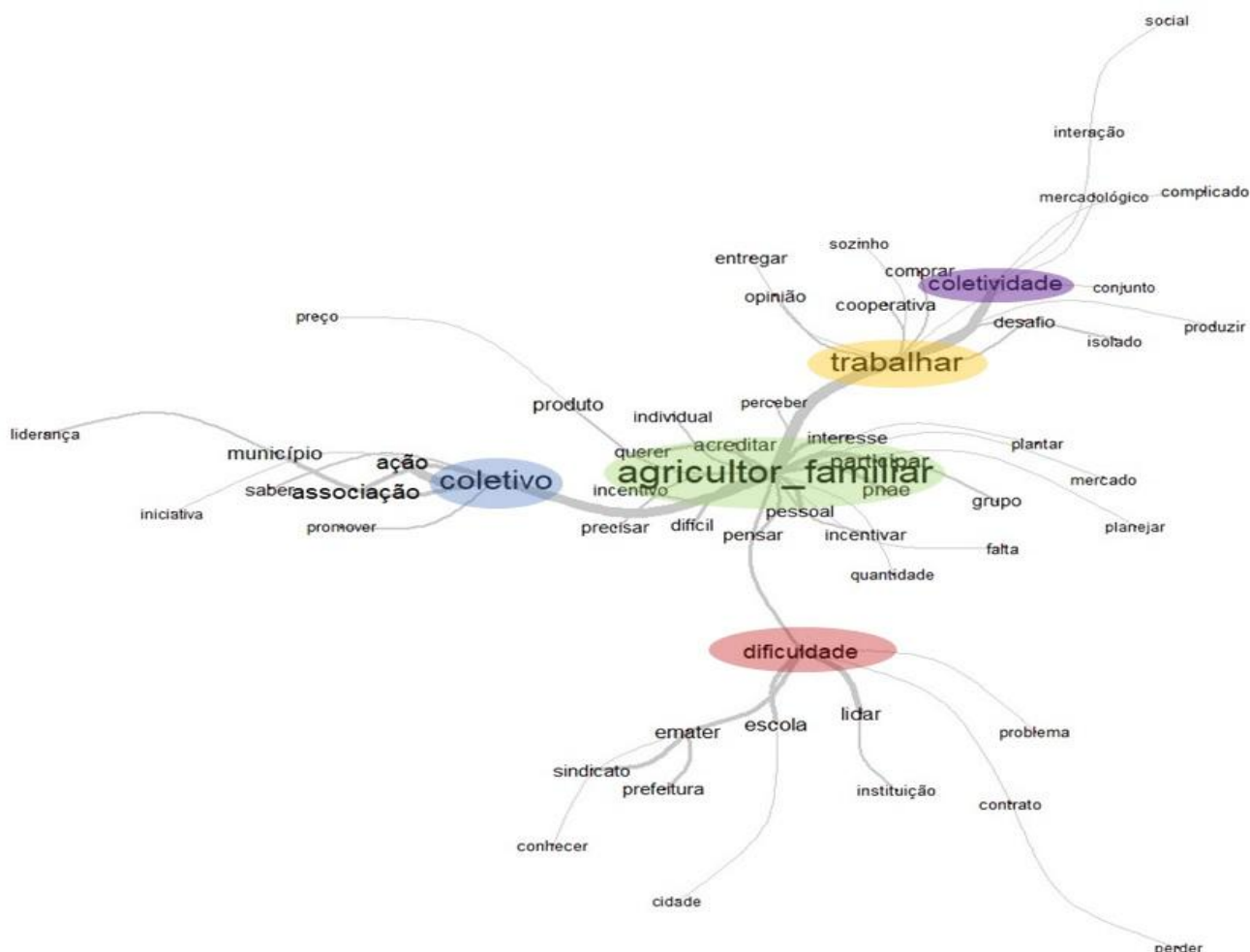
PNAE can be summarized in some main points, such as: market stability, income increase, improvement in quality of life, improvement of school meals; encouragement of family farming; crop diversification; valuing family farming, promoting food education; and local and regional development. These points, highlighted by family farmers from the seven municipalities of the Zona da Mata of Minas Gerais, show both personal and social development.

However, this effectiveness of the PNAE depends on adequate implementation and a favorable environment, as 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 Similarity 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 it, in a direct and very close way**, which together are sub-anchored in other terms, such as: **"collectivity"**, **"collective"** and **"difficulty"**; that is, there are several dimensions manifested here, such as, for example, the difficulty of family farmers in working in the collective 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 connections 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 becoming 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 for 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 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 "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 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 that 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 make 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 could work collectively, we would be able to buy cheaper raw materials and we would be able to 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"**. In the view of family farmers, the challenge of the issue of collective action aimed at the creation of a cooperative or association is perceived. It is worth mentioning that of the seven municipalities surveyed, only one municipality is characterized in the group of legal DAP; that is, family farmers who belong to the 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 lectures, 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 works 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, get a grade, enter a system, this is a challenge for us, they even participate in the PNAE. (AF-04)

The biggest problem with the PNAE is the call that is delayed. The public call that is delayed could be in February. It could be before, that there is 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 for me to get out of here and go to school to take it, it's difficult. Too far away. There's the issue of cost, right. If I think like this, a cabbage that I take to school doesn't pay for gasoline. (AF-20)

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

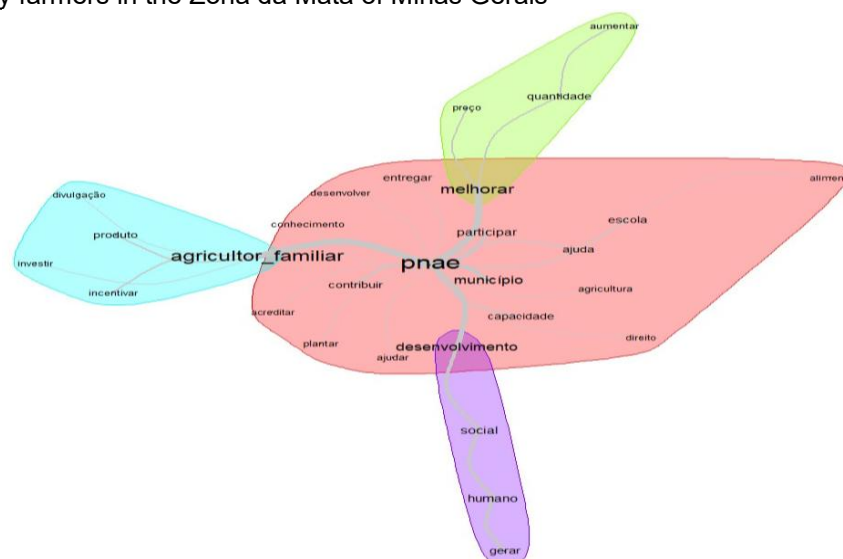
In the reading of family farmers, these are the challenges and difficulties they face on a daily basis when participating in the delivery of their food to schools, in the context of the PNAE. These barriers presented by family farmers reinforce the importance of well-structured action and articulation between the actors involved in the process of implementing the program, which favor the achievement of the PNAE objectives. 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 constituted. 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, as highlighted in Figure 37, which presents an analysis of similarity, with four different groups: it is perceived 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 again highlight the perception of family farmers about the subsidies that the PNAE generates for the personal and social development of the municipalities studied.

Regarding the term **"family farmer"**, in the light blue group, it highlights the importance of the government in encouraging, publicizing and investing in the family farming sector, so that family farmers can produce more to serve local and regional schools. In the green group, related to the term **"improve"**, the issue of improving the price and increasing the quantity of products purchased from family farmers stands out and, consequently, providing subsidies to improve the living conditions and quality of life of family farmers. Now

the grouping of the term **"PNAE"** nurtures links with the 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 acquisition of 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 buying 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, the students and the municipality itself, because, by supplying their food products to schools, income generation, stability for their families and recognition of their work occurs. These points were reported by family farmers, when they said:

I see that there is appreciation of my product, we have money coming in, so the quality of life has improved, I feel empowered, this feeling of you 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 fields. It is an alternative for family farmers to produce and have a place to sell. There is a market for the family farmer. (AF-05)

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

The program is very good, it helps the school with fresh food for the students, it generates savings for the municipality, 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 confidence 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 times in 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 state that empowerment is: *"becoming safer to make decisions"* (AF-03); *"being able to be recognized"* (AF-14); *"to have my financial freedom and develop more"* (AF-35); and *"to be able to make decisions, 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 people's growth and evolution. 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 improvement of their 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 reality can be more complex, and the ability to make choices and achieve a satisfying life can be influenced by several 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 into account these inequalities 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 to 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 CONSIDERATIONS

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, with a focus 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 highlight 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 meals 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 meals; the encouragement of family farming; crop diversification; the valorization of family farming, the promotion of food education; in addition to local and regional development.

However, during the dynamics, interactions and social practices involved in the social network of the PNAE implementation process, challenges, difficulties and barriers occur, as demonstrated by the majority of the 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 between 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 in 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, and in other regions of the country, the PNAE plays a significant role in fighting 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 to further advance the development of the region.

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