

PNAE PUBLIC POLICY IN THE NORTHEASTERN SEMI-ARID REGION: AN ANALYSIS OF IMPLEMENTATION

A política pública do PNAE no semiárido nordestino: uma análise acerca da execução

la política pública del PNAE en el noreste semiárido: un análisis de implementación



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ABSTRACT

The National School Feeding Program (PNAE), regulated by Law 11.947 on June 16, 2009, provides adequate food in order to contribute to the growth and biopsychosocial development, learning, school performance, and the formation of healthy eating habits of students. The aim of this research was to analyze how the PNAE is being implemented in the semi-arid northeast of Brazil, based on the literature. This article is a literature review, in which the studies used were identified in the Scielo, PubMed and CAPES databases, in addition to using data extracted from the National Education Development Fund (FNDE) portal, referring to transfers, specifically the percentages allocated to the purchase of family farming products for the meals of state and municipal schools in the Northeast. As a result, it was possible to analyse that there are difficulties in implementing the PNAE in schools in the semi-arid Northeast, as specific to the region, especially in relation to the amounts allocated to school meals, the process of acquiring food and the production of school meals, requiring a review of these amounts passed on and training regarding the Programme for school managers and cooks in order to better organize and properly plan the programme.

Keywords: Public Policy; School Meals; Semi-arid; Family Farming.

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RESUMO

O Programa Nacional de Alimentação Escolar (PNAE), regulamentado pela Lei 11.947, em 16 de junho de 2009, dispõe sobre a oferta de alimentação adequada, a fim de contribuir para o crescimento e desenvolvimento biopsicossocial, aprendizagem, rendimento escolar, e a formação de hábitos alimentares saudáveis dos estudantes. A pesquisa teve como objetivo analisar como se encontra a execução do PNAE no semiárido nordestino a partir do que é disposto na literatura. O presente artigo trata-se de uma revisão de literatura, em que os estudos utilizados foram identificados nas bases de dados Scielo, PubMed e portal da CAPES, além de utilizar dados extraídos do portal do Fundo Nacional de Desenvolvimento da Educação (FNDE), referentes aos repasses, especificamente dos percentuais destinados para a compra de produtos da agricultura familiar para a merenda das escolas estaduais e municipais do Nordeste. Dessa forma, foi possível analisar que existem dificuldades na execução do PNAE nas escolas do semiárido nordestino, como especificidades da região, sobretudo em relação aos valores destinados a merenda escolar, ao processo de aquisição de alimentos e a produção da merenda escolar, sendo necessária uma revisão desses valores repassados e capacitações referente ao Programa para os gestores e merendeiras das escolas visando uma melhor organização e planejamento adequado do programa.

Palavras-chave: Política pública; Merenda Escolar; Semiárido; Agricultura Familiar.

RESUMEN

El Programa Nacional de Alimentación Escolar (PNAE), reglamentado por la Ley 11.947 del 16 de junio de 2009, proporciona alimentación adecuada para contribuir al crecimiento y desarrollo biopsicosocial de los alumnos, al aprendizaje, al rendimiento escolar y a la formación de hábitos alimentarios saludables. El objetivo de la investigación fue analizar cómo se está implementando el PNAE en el nordeste semiárido de Brasil, con base en la literatura. Este artículo es una revisión bibliográfica, en la cual los estudios utilizados fueron identificados en las bases de datos Scielo, PubMed y CAPES, además de utilizar datos extraídos del portal del Fondo Nacional de Desarrollo de la Educación (FNDE), referentes a las transferencias, específicamente los porcentajes destinados a la compra de productos de la agricultura familiar para la alimentación de las escuelas estatales y municipales del Nordeste. Como resultado, fue posible analizar que existen dificultades en la implementación del PNAE en las escuelas del semiárido nordestino, como particularidades de la región, especialmente en relación con los montos destinados a las comidas escolares, el proceso de adquisición de alimentos y la producción de las comidas escolares. Es necesario revisar los montos transferidos y capacitar sobre el programa a los gestores y cocineros de las escuelas para organizar y planificar mejor el programa.

Palabras clave: Política Pública; Comidas Escolares; Semiárido; Agricultura Familiar.

1 INTRODUCTION

To offer quality education, inside what's idealized by the Federal Constitution of 1988, presently in effect, goes way beyond infrastructure and pedagogical support (Brasil, 1988). An adequate and healthy nourishment for the students is indispensable for the solidification of a strong basic education. This process demands combined efforts from the federative

entities so that the food offered in public schools to students is of good quality. In some situations, there must be greater efforts, due to economic, social and political characteristics of the territory such as the Brazilian semi-arid.

Part of the territory of the semi-arid is in the Northeast, a Brazilian region marked by a dry climate and an economy that's still growing, in comparison to other regions in the country. According to the economist and sociologist, Tânia Bacelar, the Northeast, in its historical process, had difficulties to insert itself in a Brazil that was becoming industrialized rapidly, which caused regional disparities and contributed to increase the high number of northeastern people that emigrated to other Brazilian regions, thus marking the Northeast as the main place of poverty, putting it on top of the country's social inequality indicators. However, after the Federal Constitution of 1988, Brazil advanced in the formulation and implementation of assistance policies, specially the ones of income transfer. In the past decades it has advanced by changing, improving its Gross Domestic Product (GDP), more job opportunities, people returning to the region, and migration from the rural area to the urban area, changes in agriculture, the presence of agribusiness which favored its growth and regional development (Araújo, 2000; Araújo, 2021).

The municipalities rely on the public policies of monetary aid in order to offer food in public schools, under the National School Feeding Program (PNAE) (Brasil, 2009). Regulated by the Law 11.947, from June 16th 2009, it is one of the old education policies in Brazil, created in 1940, for the offer of good quality food for students, from preschool to high school. Presently, the program reaches all of the Brazilian municipalities, and stands out as one of the greatest school feeding programs in the world (FNDE, 2021).

The current legislation discusses the school feeding service, detailing the guidelines, objectives and operation of the program. In this context, the program intends to contribute to biopsychosocial development and growth, learning, academic performance, and the formation of healthy eating habits, according to one's social reality, of students from the basic education, through actions of nutritional and eating education in the schools (Brasil, 2009). Therefore, the presence of a nutritionist in these spaces is extremely important, since that's the professional who's capable of taking part in these demands, of interacting with the students, education professionals, school lunch ladies and people in the school's management (Medeiros, 2022). Together with the nutritionist, it is also necessary to have the School Feeding Council (CAE) acting in these spaces, due to its being a collegial body of supervisory, permanent, deliberative and assistance nature, responsible for watching over a healthy and proper school food, exercising social control and being a messenger for the

students, the application of the Human Right to Proper Nourishment (DHAA) and of the Food and Nutrition Safety (SAN), besides monitoring and supervising the application of resources and the execution of PNAE (Brasil, 2018).

In this legislation it was defined that at least 30% of the transfers from FNDE for the purchase of school meals for the entire municipal, state and federal public basic education network would be allocated to the acquisition of food products from local family farmers, beginning to aggregate a series of institutional actions with the purpose of giving support to family farming (Brasil, 2009). This policy, which focuses on the demand, generates an expressive institutional market of great importance for the fortification of agricultural production from family farming, both because of the size of the demand and the resources applied and because of the guarantee of fair prices, also, because of the innovation in the way of acquisition, which happens through a public call, without bidding (Brasil, 2009; Dias; Oliveira, 2019).

The objective of the program is to guarantee that the students will have, at least, one daily meal during the time they are at school. Nowadays, it is proposed to partially provide, at least 30 to 70% of the students' nutritional needs, aiming for their best school performance when they're well fed, as well as to contribute in their daily caloric intake, so that the food offered in that place contributes for each student's psychophysical development, helping them in all sorts of aspects: physical-motor, intellectual, affective-emotional, economic and social. Those characteristics of well-being contribute so that one may have satisfactory learning conditions, besides ensuring at least one safe, in sufficient quantity, quality meal, since there are students whose main meal of the day is the one they have at school (Arque; Ferreira, Figueiredo, 2021).

Whereas PNAE has guidelines and objectives which must be followed, depending on the region, very little can be put into practice from what's determined, due to the difficulty in the transfer of resources, food acquisition from family farming, school structure and management, as well as the quality of the menus offered to the students.

Therefore, the objective of this research was to analyze how is the execution of PNAE in the northeastern semi-arid from what can be found in the literature, given that after the North region, the Northeast presents a high poverty, food and nutritional insecurity index, with children being the most vulnerable social group, seeing that their nutritional consequences are graver and immediate (Leal; Alencar; Montaña, 2021; De Freitas Bazoti *et al.*, 2023).

2 METHOD

This article is a literature review, referring to the execution of the public policy of PNAE that's directed towards the northeastern semi-arid, due to its being one of the regions that present high indexes of starvation and misery. According to Brizola and Fantin (2016), the literature review is a combination of ideas from different authors about a certain thematic, done through researches and readings performed by the researcher about a theme that he or she intends to do, that's why it's a text characterized as analytical and critical of the ideas studied about the theme chosen for the development of the work.

The studies used were identified in the databases SciELO (*Scientific Electronic Library Online*), PubMed (*National Library of Medicine*) and the CAPES portal. The researches done in the databases, took in consideration the documents which contained the combination of the following descriptors "Public policies", "Food and Nutrition Programs and Policies", "School Food", "Family Farming" and "Northeastern Semi-arid", crossed among themselves using the boolean operator "AND". Besides the delimitation of the descriptors, the selection was of articles that had as their main theme the execution of the program at schools in the northeastern semi-arid, from the resources transfer to the production process of school meals, with the objective of promoting clarifications about how PNAE works.

A documentary research was done, through the extraction of secondary data from the FNDE portal, about the allocation of resources to municipal and state schools from the Northeast, as well as the percentage of resources used for the purchase of products from family farming, considering the time period from 2010 to 2019, with the purpose of using that data to analyze how the execution of PNAE in the northeastern semi-arid happens. According to Gil (2008), the documentary research is defined as the search for materials that haven't received an analytical treatment, or that can still be re-elaborated in accordance with the objectives of the research.

3 RESULTS AND DISCUSSION

3.1 The PNAE policy in the municipalities of the northeastern semi-arid

The guarantee of quality school food is part of a whole process, from the origins and destination of the resources, to the observation of the nutrients and nutritional values that there are in the students' meal (FNDE, 2022). In that sense, the school food policy, demands

exchanges among the school's management, school community and the civil society organization for its working. Through the transfer of consigned monetary resources in the government's budget, states and municipalities receive the allocated resources exclusively for buying food products. As informed in article 50, paragraph 40, of the law 11.947 of 2009, the amount of resources is calculated according to the number of students enrolled in the basic education of each federal entity, after verifying the enrollments in the school census.

Although there is the definition of values by student, according to the type/stage of school that he or she is enrolled in, PNAE disregards other relevant factors for the efficiency of its policy, such as the territory. According to Medeiros (2008), to deny the territory is a risk of creating a crisis. In the semi-arid, for example, the school food policy presents problems that don't allow the municipalities to execute it efficiently. This region shows peculiarities that require a diverse organization and planning, in order to contemplate its diversities. In Malvezzi's (2007) words, that space doesn't consist of only climate, vegetation, soil and water, but also the mixture of people, art, religion, culture, resulting in a social process.

In that context, to develop a public policy for such a diverse territory requires more planning in order for it to be efficient, since the climatic aspects of this territory can't be disregarded, it is characterized by lack of precipitation, usually 800 mm yearly or lower and, because of that, there is the regular occurrence of droughts, which is a vulnerability for its society and for regional policies (Gomes; Zanella, 2023).

In the school food policy it's possible to note the peculiarities and challenges that the municipalities face so that they can include food definitely in the basic education of public schools. Nunes *et al.*, (2018) highlight that the policies introduced in the Northeast disregard the specificities of the region, like the slow economic growth, for happening in a slow and late way, due to the persistent poverty and inequalities there, generating obstacles to its execution, mainly when it comes to financially supporting the action. After analyzing the resources allocated through PNAE to the municipality of Satuba in the State of Alagoas, Sales and Fanego (2018) noticed that, despite having structure, the transfer policy shows obvious challenges, specially to the municipalities when it comes to the execution of the program.

Campos and Cruz (2008) show that the limitations of resources are an obstacle to the municipalities for a quality education policy, since the need for an increase in the financial investment for basic education in the municipal range is clear. This reality causes financial problems to the municipalities, specially to those that earn less, since the resources allocated by PNAE end up not being enough for the purchase of food for the schools. Thus,

the other expenses which the policy demands, be it for equipment or human resources, remain with the municipalities.

In the conception of Melo, Sá and Melo Filho (2016), the recourses that come from PNAE in municipalities from the northeastern semi-arid are proportional to the number of students and the types of education, and its bad administration and the small disparity between monetary resources and the costs of school food, sometimes inexistent, are factors that affect the quality and the execution of the program. However, Silva and Danelon (2015) say that in municipalities from the North and Northeast regions of the country, in the year of 2003, according to School Food Council (CAE), food stopped being offered in some days of the school calendar due to shortage or bad administration of the resources for buying food products, compromising the quality of the students' teaching-learning process in the municipalities in these regions. In the same study, it's noticeable that the school food public policy needs to instrumentalize, not only the economic criteria, but also the social and educational ones.

Bigas (2023), says that the population that lives in the Northeast exhibit structural disparities such as the illiteracy rate. According to IBGE (2022), 59,4% of the people that can't write and read live in that region. PNAE has been one of the strategies to lower that index, since it has been promoting the permanence of students in school. However, the execution of PNAE in these municipalities involve other factors that directly contribute to the effectiveness of the program. One of them is the participation of the policy in family farming, one of the sources of subsistence of the Brazilian northeast.

3.2 The PNAE as an institutional market for family farming

In Brazil, the institutional recognition of family farming happened in the beginning of the 1990s. According to Abramovay and Piketty (2005), it occurred because of two factors, a scientific and a political one. From a scientific point of view, many works showed that agriculture in the most advanced societies of the planet wasn't based on great land extensions and wage labor but in family units of production. Besides that, studies reveal the capacity family farming has of incorporating technological innovations, full of credit and participation in dynamic markets. From a political point of view, in a Brazil from the 1980s, the family farmers emerge in the social fights of the countryside, bringing new agendas to the movement. These new social actors had access to the land and, many times, when they weren't among the poorer people of the rural area, took credit from banking organizations,

used technology in their production and took part in exportation markets, factors that contributed to the maturing of the reinvigoration agenda of the agricultural policies.

A series of studies developed by the Food and Agriculture Organization of the United Nations (FAO) – one of the United Nations agencies, which leads the efforts to eradicate starvation and combat poverty, together with the Agrarian Reform and Colonization National Institute (INCRA), they demonstrated a huge and, until now, unknown potential of the Brazilian family farming, and created an statistical and analytical information basis to support the strategical planning of land actions and increase the efficiency, reach and social effectiveness level of these policies (INCRA; FAO, 2000).

The acknowledgement that the family production units aren't incompatible with the agricultural development, and are able of incorporating more technological production processes that may result in a greater offer of products and appreciation of the work, opposes the main argument which justifies the unlimited and exclusive support given by the country to major landowners, considered the only ones capable of modernizing the agricultural sector (Wanderley, 2014). Historically, in Brazil, the interventions of the State collaborated for a large scale production, which brought many consequences, such as: smaller diversity of food products, concentration of land and migration from rural areas to urban ones (IPC-IG, 2013).

In 1996, the National Program of Family Farming Fortification (PRONAF) was implemented, the first agricultural policy directed specifically towards family farming, with the purpose of providing agricultural credit and institutional support to small rural producers, who had been excluded from public policies so far and faced grave difficulties of maintaining themselves in the rural area (Schneider; Cazella; Mattei, 2021). In this period, even though the agricultural policies had already understood rural development in an internal logic, through the diversification of family farming, in practice they still supported themselves on a topic common to previous models: the offer (Nunes *et al.*, 2014).

In this context, the definition of family farming was officialized by the law 11.326, of July 4th, 2006. For this law, one is considered a family farmer and a Rural Family Enterprise when he or she does activities in the rural area, having a total area of up to 4 fiscal modules¹,

¹ A fiscal module is an unit of measurement, in hectares, whose worth is fixed by INCRA for each municipality, considering: the predominant type of exploitation in the municipality (a) (fruits, vegetables and small animals, permanent crop, temporary crop, livestock or in the forest); (b) the income obtained in the predominant type of exploitation; (c) other exploitants that exist in the municipality that, despite not being the predominant ones, are outstanding when it comes to the income or land used; (d) the concept of "family property". The extension of a fiscal module varies according to the municipality where the property is located. In Brazil, a fiscal module varies from 5 to 110 hectares (Brasil, 2012).

using at least half of the family workforce in the productive process, and at least half of the family income must come from the rural establishment, and it must be directed strictly by the family members. These requirements must be attended to simultaneously (Brasil, 2006).

According to Nunes *et al.*, (2014 p. 113), “the policies focused on the offer were improved throughout the years, through the enlargement of the agrarian reform process, and the bigger access to credit, through PRONAF”, while the policies that were focused on the demand were created from 2003, with emphasis to the Food Acquisition Program (PAA). PAA was created in 2003, inside the Zero Hunger Program, through the article 19 of the Law 10.696, with the objectives of promoting the access of the population, that’s in a situation of food and nutrition insecurity, to food in the necessary quantity, quality and regularity, and their social inclusion in the rural area, through the strenghtening of family farming, and the benefited publics are: the food suppliers and consumers (Brasil, 2003). The program has the intention of connecting the demand for food, created or encouraged by public programs, the so called “food institutional market”, with the agricultural production that originates from family farming, which faces limitations on the marketing of their products (Souza, 2012).

Another great achievement, in the sense of facilitating family farmers’ access to the institutional food market, happened with the initiative of encouraging public purchases of food products for school meals through PNAE. In 2009, the Law 11.947 established that at least 30% of the transfers from FNDE for the purchase of school food for the whole federal, state and municipal public basic education network, would be directed for the acquisition of food products from local family farmers. That way, this public policy shows itself as an expressive and important institutional market, with the guarantee of fair prices, besides allowing the creation of short chains of products production and commercialization, respecting the regional eating habits and local vocation for agriculture (Dias; Oliveira, 2019).

One of the great innovations presented by the new PNAE legislation was exemption from bidding, just like in the PAA, in the food acquisition process, thus increasing the conditions of family farmers’ direct participation in the commercialization of their products. PNAE has been one of the main inclusion policies mechanisms in the rural area. The program, as well as others which foster the productive inclusion of low-income people, favors not only their economic participation, but also contributes to the reduction of regional imbalances in the different regions of Brazil, specially the Northeast (Nunes *et al.*, 2018).

Data from the Agricultural Census of 2017 reveals that the Northeast region, which has the biggest part of its territory (64,8%) in the brazilian semi-arid, is home, in its territory,

to most of the family farming rural establishments, 47,2% of the national total, with family farming being the main way of production and work in the rural area, absorbing around 73% of the producers that are accounted for, which is 4,7 million people, although only 36,6% of the total area is occupied by agricultural establishments (IBGE, 2017). While the non-family sector represents 63% of the total area, and absorbs only 20% of the rural area workforce (Aquino; Alves; Vidal, 2020).

An study made in 2013 by the Policies International Center for the Inclusive Growth (IP-CIG) in order to evaluate the evolution or purchases from family farming with resources from PNAE, in the period between 2010 and 2012, based on data from an online system developed by PNAE, indicates that, between the first and the last of the evaluated years there was an increase of almost 20 percentage points of executive entities² which got products from family farming, considering the average percentage of the whole country, with it being 48% in 2010 and 67% in 2012. The data indicates growth in all regions, however, in the South region, where small producers have higher levels of social and physical capital, the performance is higher, going up to 87% in 2012; in other regions that average is below 67%. In the Northeast, despite registering an 18% growth between the first and the last years evaluated, in 2012 only 58% of the executives entities acquired products from family farming.

Regarding the percentage of resources distributed by FNDE used effectively for the purchase of family farming products, the study that was mentioned before showed that, in 2010, the country's average was of 22%, going up to 29% in 2012, still a little below the 30% minimum established by the legislation of PNAE. This data also demonstrated a better performance by the South region in relation to the others, reaching 37% in 2012, while the Northeast ensured a percentage of 23% in the same year, struggling to progress to the minimum percentage of 30%, despite having increased the average of executive entities that began to buy products from family farming (IPC-IG, 2013).

Analyzing the justifications of the School Food Council (CAE) for the impossibility of reaching the 30% requirement, during the analyzed period (2010-2012), Saraiva *et al.* (2013, *apud* IPC-IG, 2013), highlight that in the Northeast region the best justification among all the others was the struggle to guarantee a regular supply of family farmers' products to meet

² Executive Entities can be understood as: State, Municipality, Federal District and federal schools; these being responsible for the execution of PNAE, also for the complementation of the financial resources transferred by FNDE, for the accountability of the program, for the offer of food in the schools for, at least, 800 class hours, distributed in at least 200 (two hundred) days of effective school work, and for food and nutritional education actions for all the enrolled students (Brasil, 2013).

the needs of the schools. The authors suggest that an alternative to overcome this difficulty and guarantee a regular supply of products would be the planning of menus by the executive entities which take into consideration the variety of food products in the region, as well as the seasonal products and the possible weather events that may interfere with the production, and on the farmers' part, a better planning of the crops and investments, based on the institutional demand requirements.

However, more recent data provided by FNDE (Board 01 and 02), referring to the year of 2019, shows that most of Northeast states overcame those difficulties, as they surpassed the minimum 30% limit of acquisition from family farming. Only the states of Pernambuco and Piauí didn't reach the minimum percentage.

The data also shows that all the other regions of Brazil also surpassed the minimum percentage in the year of reference, and the Northeast region as a whole, got from family farming, in the year of 2019, an average of 37,91% of the resources (Brasil, 2019).

Board 01 – Percentages of acquisitions from family farming with PNAE/FNDE resources, in the regions of Brazil in 2019.

REGION	VALUE ALLOCATED BY FNDE (R\$)	VALUE OF FAMILY FARMING ACQUISITIONS (R\$)	AF PERCENTAGE (%)
MIDWEST	251.547.630,69	82.868.606,77	32,94
NORTHEAST	1.282.117.399,03	463.218.953,98	36,13
NORTH	412.638.650,34	188.807.878,92	45,76
SOUTHEAST	1.443.291.303,30	450.572.459,17	31,22
SOUTH	521.587.318,43	276.429.536,69	53,00

Source: Elaboration by the authors, based on data from FNDE (Brasil, 2019).

Board 02 – Percentage of acquisitions from family farming with PNAE/FNDE resources in the states of the Northeast in 2019.

STATE S	VALUE ALLOCATED BY FNDE (R\$)	ACQUISITIONS FROM FAMILY FARMING VALUES (R\$)	STATE PERCENTAGE (%)
AL	74.500.817,32	25.116.485,60	33,71
BA	292.041.656,98	103.211.625,81	35,34
CE	225.452.654,19	86.583.637,69	38,40
MA	212.028.434,04	72.957.698,78	34,41
PB	88.287.063,84	47.623.071,71	53,94
PE	185.988.256,45	53.761.399,32	28,91

PI	97.711.442,67	26.901.199,40	27,53
RN	66.230.448,64	29.134.947,37	43,99
SE	39.876.624,90	17.928.888,30	44,96

Source: Elaboration by the authors, based on data from FNDE (Brasil, 2019).

That way, it is understood that PNAE proves itself for the Northeast region as an important instrument to ensure the flow of production from family farming. Besides that, policies that focus on the demand, like PNAE and PAA, have been contributing to the appearance of an increasing number of collective organizations in the region, specially cooperative ones. Since 2009, with the requirement of the 30% minimum, it's been registered an increase of supplier collective organizations in all regions of Brazil. According to data from FNDE, between the years of 2009 and 2014 there was a 600% growth in the number of collective organizations that supplied the FNDE (Nunes *et al.*, 2018), although data from the 2017 Agricultural Census shows that in Brazil the percentage of family farming rural establishments that participate in cooperatives is very small, being 10,6% in total, while in the Northeast region it is only 1,3% (Silva; Nunes, 2023).

In the Northeast region, allied to the increase in the number of municipalities which began to buy products from family farming for school food, and to the growth in the number of cooperatives helping to expand the commercialization area and to aggregate value to family farming products, there's the addition of the increase in the diversification of products acquired through the PNAE, as well as the appreciation of the traditionality in regional food, such as: green beans, red rice, sweet potato, pumpkin, cilantro, small animals meat (chickens, goats, fish etc.), which were introduced in public schools. However, there are still many challenges so that the Northeast region may be prepared to better enjoy the resources from PNAE, and among them it's highlighted the meeting of the requirements of the supervisory bodies, demanding a better production structure from family farming, both to guarantee its quality and to add value to its products (Nunes *et al.*, 2018).

3.3 Nutritional benefits of school meals

Considering that school meals emerged with the intention of meeting the students' nutritional needs, it is necessary that school meals are planned efficiently, considering the combination of ingredients, the preparation method and the way of serving the food so that the meals have a color combination and adequate consistency, because these factors

influence the quality, good reception and nutritional characteristics. In the planning it is also necessary to follow the premises arranged by PNAE and by the Food Guide for the Brazilian Population, considering the limit in the offer of low nutritional value of processed foods, high in sugar, fats, salt, canned food, processed meats, sweets, food semi-ready for consumption, concentrated feeds and low nutritional value drinks. Since it is in childhood that healthy eating is the main factor for mental and physical development, school meals are considered of great importance for the development of good eating habits and for the creation of good quality of life (Brasil, 2014; Bartolazze; Cazal, 2019; Medeiros, 2022).

In this context, it's of great interest to be aware of the nutritional value, food quality, and acceptance of the food offered by public schools, because unbalanced meals, that aren't served with quality and safety, or aren't well accepted by their consumers won't fulfill what's arranged by PNAE, needing to improve the construction and planning of the menu, as well as the preparation of the meals so that the students are benefited (Bartolazze; Cazal, 2019).

3.4 Inadequacies in school meals

It's possible to observe that the inadequacy of the food offered is part of the reality in the northeastern semi-arid, mainly caused by the lack of planning of the meals, as well as the lack of structure in the school kitchens and by those who handle the pre-making of the food, in the moment when the food is handled, putting at risk the safety and quality control of the food made for the school meals, which contributes to the food contamination process that may begin in the production of the raw material, spreading to the transportation, reception and storage steps (Simplício; Silva, 2020).

According to Simplício and Silva's (2020) reasearches, carried out in public schools in Petrolina/PE, 28,57% of the lunch ladies had incomplete uniforms, had inadequate hygiene habits when handling the food, the fruits were stored in inadequate places, directly on the floor, near chemical products, the bread received for the meals wasn't stored in an adequate, clean and sanitized place, in the storage room there were products in great quantity which were near the expiration date, there were food products with no identification of their usage, without following the FEFO (the first to expire in the first to go) products usage logistics, in other words, there wasn't control or organization of the storage room, the hygiene of the space wasn't satisfactory, among other irregular aspects that were observed by the researchers.

Still in Simplício and Silva's (2020) study, it was possible to analyze that there was greater resistance of the lunch ladies in situations such as doing incorrect activities, even though they knew they weren't allowed to and the consequences they could cause. Besides that, it was seen that the lunch ladies had certain limits in their roles, caused by the lack of resources for the school meals, since there was lack of payment, wearing out their activities, as well as contributing for the non-conformity in the process, thus involving an entire destructuring chain where the lunch ladies found themselves, many times, without adequate capacity for the job, in which, for the most part, they are outsourced, with precarious contractual relationships and working conditions.

Lima (2019), in his research, evaluated the sanitary-hygienic conditions and the quality of animal food products, in the pre-making step, in Preschools Units (UEI) helped by the PNAE in the municipality of Mossoró/RN. At the end of his analysis, it was possible to detect that the UEI analyzed showed inadequacies that can directly affect the health of more than 1.800 enrolled preschoolers, exposing them to contact with bacteria super-resistant to antibiotics. Still in this context, Barbosa (2019) in his study about the beef panorama in the state of Rio Grande do Norte (RN), observed that beef used in the making of school meals acquired through PAA poses a risk to the students' health, because the municipal slaughter and inspection services system is precarious, considering not only the meat as a risk, but also all animal products, and the processed products that come from slaughterhouses in RN.

Based on these studies, it's possible to analyze that the inadequacy of school meals is present in all schools, putting the children's health at risk, as well as their school development. So, it's necessary for the supervision done through sanitary inspections in the schools to be even more efficient, as a way of verifying what's not appropriate, and from that, to promote trainings for the handlers of the food (lunch ladies) and the school management with the objective of controlling the quality in the making of the food, thus involving the Good Handling Practices, which are adequate techniques and procedures for the making of food, which help to ensure quality and sanitary-hygienic safety of the food (Leal; Alencar; Montañó, 2021).

According to Leal, Alencar and Montañó (2021), all of this training process is part of learning moments that help the professional reach the required efficiency in his or her job, contributing to the development of appropriate habits for general growth and the importance of consuming safe food.

Another factor that's seen as inappropriate in the school meals of the semi-arid is the quality of the planning of the menus offered to the students. Related to that, Sena (2023) analyzed in his research, about the quality of the menus offered in preschools helped by PNAE in the state of Rio Grande do Norte (RN), that there is an offer below what's required of the *in natura* fruits group and of the vegetables group, as well as there are sweetened drinks, among other inadequacies. As a final result of the menus analysis, it was discovered that 34,5% of the menus offered to preschoolers were classified as "inadequate" and 48,3% were classified as "needing improvement". The total sum of the menus classified as inadequate and needing improvement, is approximately of 83%, thus showing that there is a big margin for improvement in the quality of the menus offered in preschools of the municipalities in RN.

4 CONCLUSION

Before what has been exposed along this study, it's possible to make a general analysis, in the territories where PNAE, despite being considered one of the greatest public education policies and also one of the oldest, has some execution difficulties due to not considering the specificities of the region, like climatic ones such as regular droughts, and economic ones such as the municipalities which have low income and consequently, have low capacity of injecting resources in the program, besides the values destined for school meals, the food acquisition process and the making of school meals.

One can also observe that the impact of this policy for family farmers is growing, although there are still some factors that, if observed, can provide a better performance in relation to the percentage used in the purchase of products from family farming, like the planning of a menu that's more adequate to the local reality, considering all types of culture, the seasonality of the production, as well as a better planning from family farmers in relation to investments in the land and the meeting of the requirements from supervisory bodies.

This way, it is considered necessary a review of the program parameters in relation to regional questions and to allocated values, as well as the prevision of trainings intended for the school managers, lunch ladies and suppliers, among other aspects, with the purpose of optimizing the whole production process of school meals, beginning at the planning and organization of the production, going through the management part of the program, to the food making phase. And, finally, it's recognized the importance of elaborating deeper studies which may permit a comparison of the performance of the PNAE in these territorial spaces

directed to the northeastern semi-arid in a clear and more specific way in order to make better arguments in the proposed discussion.

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