





Social Indicators of Food and Nutritional Security in Municipalities in Consad Jiquiriçá Valley, Bahia, Brazil

Indicadores Sociais da Segurança Alimentar e Nutricional em municípios do CONSAD Vale do Jiquiriçá, Bahia, Brasil

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Abstract: Objective: to evaluate the food and nutrition security situation and determinants in municipalities of Bahia state that are part of the CONSAD *Vale do Jiquiriçá*, Methods: Applied a Protocol with 19 Indicators distributed among its four dimensions (food availability, access to food, food consumption and biological use of nutrients) was applied in the 9 municipalities studied. Results: Mild food insecurity was identified for the entire territory in terms of availability for consumption and biological use of nutrients and identified moderate food insecurity in the dimension of access, making it possible to indicate which variables define the situation. Conclusion: Food insecurity was a condition present in all the municipalities studied. It was possible to identify which variables were compromising the best performance of the CONSAD municipalities in the different dimensions, therefore, the method applied generates guidelines for public action in the direction of food and nutritional security.

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1. Introduction

Food and Nutritional Security – FNS is understood as a complex and multidimensional phenomenon that develops in a continuous process, at different levels (Bezerra, 2015). It is a strategic and permanent objective of public policies guided by the principles of the Human Right to Adequate Food – HRFN and food sovereignty. Thus, the objective of FNS encompasses and qualifies the eradication of hunger, malnutrition and more serious manifestations of food insecurity (Maluf, 2006). FNS contemplates at least, four dimensions: food availability; food consumption, access to food and biological use of nutrients. It expands by incorporating into the spheres of agricultural production and supply, the dimensions of access, nutritional deficiencies and food quality, guaranteeing the conservation and control of the genetic base of the agro-food system (Anchau, 2007; Nascimento et al., 2019).

FNS, as defined by Law, contemplates interventions in various fields of public action (Ramos, 2020). Given this scope, the FNS concept was adopted in Brazil in 2006, according to the Organic Law on Food and Nutritional Security (LOSAN - Law no. 11.346, of September 15, 2006) after the Second National Conference on Food and Nutritional Security and Consists of:

The realization of everyone's right to regular and permanent access to quality food in sufficient quantity, without compromising access to other essential needs, based on health-promoting eating practices that respect cultural diversity and that are social, economic and environmentally sustainable (our translation, BRASIL, 2010)⁶.

Data from the National Household Sampling Survey (PNAD) carried out by the Brazilian Institute of Geography and Statistics (IBGE), show an improvement in the population's FNS results, with a reduction in the Food Insecurity (FI) situation. However,

⁶ *A realização do direito de todos ao acesso regular e permanente a alimentos de qualidade em quantidade suficiente, sem comprometer o acesso a outras necessidades essenciais, tendo como base práticas alimentares promotoras de saúde, que respeitem a diversidade cultural e que sejam social, econômica e ambientalmente sustentáveis (BRASIL, 2010).*

despite this situation, 14.7 million private households still live with situations of deprivation and hunger (IBGE, 2014).

The approval of the National Food and Nutritional Security Policy – PNSAN, in 2010, guided by the parameters established in LOSAN (Law no. 11.346/06), with the objective of ensuring the HRFN and food sovereignty so that they have regular and permanent access to quality food, in sufficient quantity (BRASIL, 2010). There is an understanding that FNS policies and systems must have a strong territorial link, in order to maximize the application of resources that are always scarce in the face of ever-increasing and complex demands. Many studies have adopted territorial approaches to assess the extent of food storage for the self-sufficiency of the communities served (Galli et al., 2020). That is, there is a tendency to analyze the problems and target interventions not only for individuals or families, but for territories, which is understood to be a way of promoting a greater impact on changing people's living conditions.

The territorial approach and decentralization of public policies contributed to the definition of the proposal for a new pattern of state intervention, in which, instead of sector-wide investments, it would be up to the latter to support initiatives with a broader scope, territorial development, intersectoral and locally rooted (Oliveira et al., 20017).

In Bahia, rural territories came to be called Territories of Identity formed from the federal and state territorial development policy. Among the 27 Identity territories in that State, The Jiquiriçá Valley Identity Territory – TIVJ is located (Santos, 2017). State Law no. 13.214/2014, provide for the principles, guidelines and objectives of the Territorial Development Policy of the State of Bahia and Decree no. 16.792/2016 institutes the Territorial Agenda of Bahia with the purpose of providing opportunities for the development of the Identity Territories of the State of Bahia. (BAHIA, 2014; Bahia, 2016)

In this perspective, territorialization proposals for public policies were built, such as the creation of the CONSAD (Food Security and Local Development Consortia). With the objective of promoting the association between municipalities with a low Human Development Index - HDI, in a partnership between public authorities and civil society, in the wake of No Hunger Program, The CONSAD were created in 2004, as an initiative that aims to promote Food Security through a territorial policy. The creation of these consortia in Brazil follows the direction of valuing the space in which subjects live to improve public action in favor of FNS and development. The creation of Consortium follows the direction of enabling joint actions, with the main objective of making

permanent the articulations to promote actions in an institutionalized manner, aiming primarily to integrate the spheres of production, marketing, consumption and credit in the poorest regions of the country that face greater risk of food and nutritional insecurity. It is, therefore, an efficient modality of cooperation that makes it possible to discuss, plan, decide, and implement local development actions to improve the population involved (BRASIL, 2009; Bonnal, 2011).

This study aimed to assess the situation of FNS and its determining factors related to occurrence of food insecurity among member municipalities of CONSAD Jiquiriçá in 2012.

2. Methodological Aspects

2.1 Study setting

The Jiquiriçá Valley Territory is one of the 27 Identity Territories in the State of Bahia, formed from the federal and state territorial development policy, and corresponds to 21 of the 25 municipalities that make up the Jiquiriçá River watershed, located to the west from the Recôncavo Baiano, approximately 150km from the city of Salvador (Connap, 2002). This study was carried out with CONSAD Jiquiriçá Valley, which is part of the Jiquiriçá Valley Territory.

In Brazil, 40 CONSAD were implemented, in Bahia two were implemented: Brumado and Jiquiriçá Valley, with the purpose of coordinating the implementation of agri-food actions and projects aimed at reducing poverty (Olalde et al., 2010). The consortia, as of Law no. 11.107/05, started to have legal personality, assumed obligations and acquired rights, following an operating structure proposed in the CONSAD Guide, created by the Brazilian Institute of Municipal Administration (IBAM) in 2004.

The Consortia seek to compose integrated actions for the specificities of each region, aiming to build an institutional design of different policy, involving both the federal, state and municipal spheres as well as civil society. They are associations between municipalities and their mission is to carry out joint actions with regard to local problems related to the promotion of food safety. The action of the Consortia is institutionalized through the creation of deliberative councils, in which the municipalities that are part of the Consortium are represented by the government and civil society. In short, the proposal of a CONSAD is to strengthen the local sphere, through a permanent policy of generating employment and income, thus ensuring access to regular and adequate food, corroborating the notion of food security (Bidarra, 2012).

The research was carried out in samples of municipalities belonging to the CONSAD territory of the Jiquiriçá Valley, comprising nine small municipalities⁷ (Amargosa, Brejões, Cravolândia, Jiquiriçá, Laje, Maracás, Mutuípe, Nova Itarana and Ubaíra). This territory has a shared social and geographic identity as a result of common location, landscape and environmental characteristics, internal communications and service infrastructure, and history of production of a range of commercial cultures oriented to regional markets. Interconnecting with the main regional centers through a road infrastructure of five federal and 16 state highways. Despite its small extension, its space is quite heterogeneous, harboring internal diversifications, exemplified by geoclimatic and, consequently, socioeconomic differences existing in its subspaces (PTDRSS, 2017).

Municipalities in general have a low degree of social development, especially when considering the average information for the State of Bahia, as well as many indicators present values close to or lower than those presented for the State. According to the 2016 estimate, five of the nine municipalities in CONSAD Jiquiriçá Valley surpass the level of 20,000 inhabitants, namely: Amargosa, Laje, Maracás, Mutuípe and Ubaíra. These municipalities have 129,236 inhabitants, therefore 74.52% of the territory's population. Two of the nine municipalities have less than 10,000 inhabitants: Cravolândia and Nova Itarana (PTDRSS, 2017). The municipalities of Maracás and Amargosa are the largest in the territory according to the number of inhabitants with more than 30,000. Really municipalities with a high urbanization rate have a concentration of almost all of their economic activities and labor directly/indirectly correlated with the agricultural/livestock sector. Since 48.5% of these are in the urban area and the remaining 51.5% in rural areas.

Despite the evolution of the HDI in recent years, in the municipalities of the Jiquiriçá Valley, it is still below Bahia's average of 0.660. Only three of the nine municipalities in the territory have an HDI above 0.600, especially Amargosa (0.625), Maracás (0.607) and Mutuípe (0.601). The lowest numbers were found in Jiquiriçá with (0.553) and Nova Itarana (0.524).

Low monthly family income per capita and inequality in the distribution of income among households in the same municipality was highlighted in previous studies and

⁷ Small municipalities are those with less than 50,000 inhabitants (IBGE, 2019).

revealed factors that were increasing the chances of families in households living in food insecurity: per capita household income < ¼ the minimum wage; number of residents in the household > 4 people. These data showed that the Jiquiriçá Valley is a territory at risk for FNS, demonstrating that the results can collaborate with public management to know the problems in the territory and guide the direction of actions necessary to intervene effectively and efficiently.

The decision to develop the project in the Jiquiriçá Valley considered, in addition to the above, better accessibility, the existence of other projects coordinated at the time by the State Secretariat for Social Development - SEDES for the same territory and the possibility of joint work in the FNS field with professors from the Federal University of Recôncavo of Bahia – UFRB. This choice considered the set of research projects developed in the municipalities by researchers from the School of Nutrition of the Federal University of Bahia - UFBA. In addition, the acceptance of municipal managers to carry out the study was decisive.

2.2. Indirect assessment of food and nutrition insecurity

2.2.1. FNS Assessment: Brief Review of Methods

Since the National Conferences on Food and Nutritional Security and the creation of LOSAN, new and better methods for evaluating FNS at the municipal level have emerged. The municipality became the most important sphere for carrying out the FNS assessment, with a view to decentralizing social public policies, aiming at the implementation of actions aimed at promoting FNS (Panelli-Martins et al., 2008).

FNS, however, is a complex phenomenon, and its assessment represents methodological challenges in view of the multiple dimensions involved. Burlandy (2007), analyzing the dimensions of FNS, for example, states that there is no way to promote adequate consumption without focusing on the production system that determines how food is produced, marketed and made available. According to the author, facing this process requires an integrated approach of programs that focus on the multiple determinants, since it is essential to articulate the food dimension (production, marketing and consumption) and the nutritional dimension (use of food by the body and its relationship with the health). Rose (2008) states that for most Latin American Countries' food insecurity is less a problem of availability and more a matter of access and biological use. This also implies adequate stocks, food flows and enough money to meet basic needs.

Since the 1996 the World Food Summit, Food and Agriculture Organization - FAO has emphasized the relevance of implementing systems for monitoring and evaluating FNS in countries. The FAO also released a municipal guide aimed at assisting governments in building the action plan. This guide proposes a simplified protocol of indicators divided into four dimensions of FNS, namely: food availability, access to food, food consumption and biological use of nutrients (Móron, 2001). To these dimensions that can be considered classic in the evaluation of FNS, it is highlighted that some authors (Gross et al., 2000 and Kepple, 2010) add the dimension of stability, related to the degree of permanence of use, access and availability.

Thus, measuring the municipal FNS represents a challenge due to the complexity and vast number of factors associated with this phenomenon. Perez-Escamilla and Segall-Corrêa (2008) recommend the development of a regional instrument that can be adapted to local contexts.

In view of the above, Panelli-Martins (2008) researcher at the Nucleus of Nutrition and Public Policies developed an Indicator Protocol for the evaluation of the municipal FNS.

2.2.2 Indicator Protocol

The protocol implies the collection of information available in official and public databases such as the Information Technology Department of the Unified Health System - DATASUS, Brazilian Institute of Geography and Statistics - IBGE, The Primary Care Information System - SIAB, which are the main sources cited by Brazilian or international studies, because they represent information of easy access and wide coverage. The sources, together with other information on the assumptions, formulas, criteria, parameters and scores of the indicators were used as detailed in Table 1 and 2. The collection was carried out from March to December 2011.

The protocol used in this study is composed of 19 indicators, grouped into the four dimensions of the FNS assessment: 1) Availability of food, which refers to the transport, production, storage and marketing of food in the municipality that can limit the supply of food the population; 2) Access to food, referring to social, economic and cultural factors that interfere with food consumption; 3) Food consumption, which includes aspects related to health and nutrition conditions that reflect food consumption and; 4) Biological use of nutrients, which is related to conditions of access to social, sanitation and health services that may limit the use of nutrients present in the food consumed. For each

indicator, there is a premise that aims to establish the link between the result obtained by the indicator and the concept that guides the FNS assessment.

Details of this protocol, such as the indicators distributed among the different dimensions, are shown in Table 1. To read the results obtained, a scale of values divided into four parts was adopted, so that the sum of the results per dimension can correspond to percentages different performance in the dimensions, which refer to different situations of Food and Nutritional Security-FNS and Food and Nutritional Insecurity - FNI (Mild, Moderate and Severe), as shown in table 2.

In this study, the protocol was applied to the nine municipalities of CONSAD Jiquiriçá Valley (Amargosa, Brejões, Cravolândia, Jiquiriçá, Laje, Maracás, Mutuípe, Nova Itarana, and Ubaíra) and obtained results for each of the dimensions. It is observed that with the protocol it was possible, in view of a certain result, to return to the indicators and verify in which aspects the problems that compromise food security in the municipality and in the territory refer.

Table 1: *Indicator Protocol by Dimension*

Availability Dimension		
It is related to the production, storage, transport and marketing of food and other factors that interfere with the availability of food for the population of the municipality.		
1. Existence of food warehouses in the municipality	2. Existence of access roads to the municipality	3. Existence of intra-municipal roads with good access conditions
4. Existence of strategies to bring the small producer closer to the consumer	5. Existence of small producer cooperatives	6. Diversity of source lines for small producer credit
Access Dimension		
It encompasses social, economic and cultural factors that interfere with food acquisition		
1. Average income of the head of the household	2. Distribution of households according to years of study of the head of the household	3. Average number of residents per private household
4. Percentage of female-headed households		

Food consumption dimension		
It is related to the dietary pattern of a population and the social, economic and cultural factors that interfere with it.		
1. Percentage of exclusive breastfeeding	2. Percentage of children with low birth weight	3. Percentage of children <5 years old with weight deficit for age
Biological use of food Dimension		
It is related to the conditions of access to social, sanitation and health services and their impact on the diet and nutrition of the individual/population.		
1. Infant Mortality Coefficient	2. Percentage of households served with treated water	3. Percentage of households served with household garbage collection
4. Percentage of households with domestic sewage collection	5. Family Health Program - PSF coverage	6. Population served by Community Health Agents - ACS

Table 2: Scoring scale (percentage) and category:

POINTS	CATEGORY	DEFINITION
0 to 24.9%	SEVERE FOOD AND NUTRITIONAL INSECURITY – SEVERE FNI	Situation in which a greater number of factors would compromise the full realization of the concept, characterizing a situation of deprivation and hunger.
25 to 49.9%	MODERATE FOOD AND NUTRITIONAL INSECURITY – MODERATE FNI	Situation in which a greater number of factors would compromise the full realization of the concept, characterizing a situation of greater vulnerability to deprivation and hunger.
50 to 74.9%	MILD FOOD AND NUTRITIONAL INSECURITY – MILD FNI	Situation in which some factors would compromise the full realization of the concept, with relative vulnerability to deprivation and hunger.

≥75%	FOOD AND NUTRITIONAL SECURITY - FNS	Ideal situation in which a set of factors would act to ensure the full realization of the concept of food and nutrition security.
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3. RESULTS AND DISCUSSION

3.1 *The situation of local municipal of FNS*

Considering the municipalities studied using the Indicator Protocol, it was possible to identify for CONSAD Jiquiriçá Valley the result of 53.7% of FNI (and of these, 55% of Mild Food and Nutritional Insecurity – Mild FNI and 45% of Moderate Food and Nutritional Insecurity – Moderate FNI). Studies carried out by Pereira et al. (2019) in municipalities of a territory in Bahia applied with the same protocol found global results, in which they were classified as FNI, being 24.6% Mild FNI, 71.9% Moderate FNI and 3.5% in Severe FNI.

The evaluation results for each municipality, represented by dimension, revealed that the favorable or constraining conditions for achieving FNS differ according to the categories (Graphs 1, 2, 3 ,4). The municipality of Brejões draws attention, which presented a Moderate FNI situation in two of the four dimensions analyzed (Availability and Consumption), which is the worst result in the territory (Graphs 1 and 3). In this, the following results were revealed: inexistence of warehouses for food stock; lack of small producer cooperatives; high percentage of children with low birth weight; low percentage of exclusive breastfeeding; poor coverage of basic sanitation, such as: lack of access to treated water, collection of household waste and sanitary sewage, so that family exposure to adverse conditions of basic sanitation directly influences the family's health, therefore, its food and nutritional security.

The municipality of Nova Itarana obtained the result (33%) Moderate FNI in the Availability Dimension (Graph 1). It can be seen through the results in the Availability Dimension the inexistence of warehouses for food stock, inexistence of intra-municipal roads with good access conditions, inexistence of cooperatives of small producers and diversity of sources for credit to the small producer.

The municipalities of Cravolândia and Maracás had the same results (33%) Moderate FNI in the Access Dimension (Graph 2). With regard to the low results in the Access Dimension in these two cities, attention is drawn to the distribution of households according to years of study by the person responsible for the private household with 4

years of education (IBGE, 2010). It is known that education influences not only the chances of getting better pay at work, but also the selection and preparation of food.

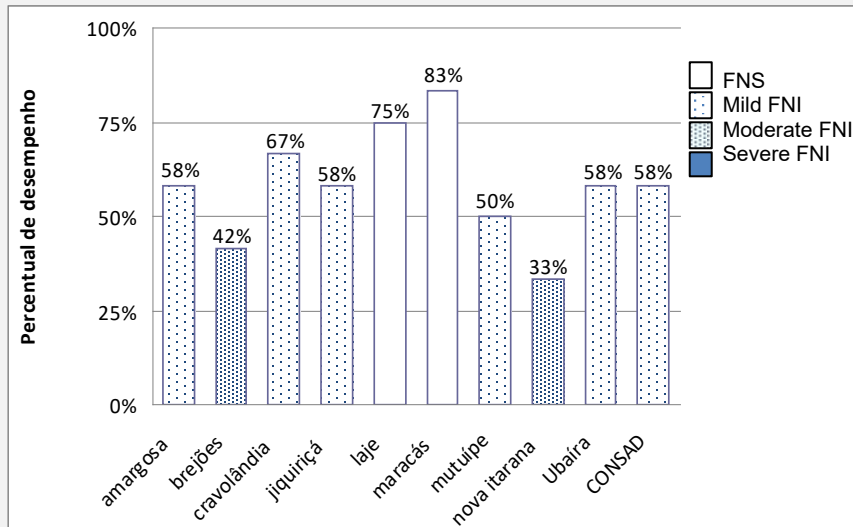
With regard to food consumption, the same results were identified in the municipalities of Brejões and Mutuípe (33% and 33%) showing a Moderate FNI situation (Graph 3). It is believed that due to the low percentage of exclusive breastfeeding that was observed in these cities.

Overall, it should be noted that no situation of severe food and nutritional insecurity was observed in any of the municipalities studied in any of the dimensions considered (Graphs 1, 2, 3 and 4). This result differs from that obtained by applying the Brazilian Scale of Food Insecurity - EBIA applied in the municipalities of CONSAD, which recorded food insecurity in 70.3% of private households, and this result was divided into three levels of severity, with 34.3% in mild FNI, 23.3% in moderate FNI and 12.7% in severe FNI (RIBEIRO, 2012). It must be considered that the EBIA and protocol methods presuppose measuring the same phenomenon, but from different perspectives.

It can be admitted, for example, that in a region where food availability is potentially adequate, the population's differentiated income compromises access to food. The Jiquiriçá Valley has natural resources and other conditions that explain good results in terms of food availability, but the Average Per Capita Income – RMMPC is low, and the monthly family income per capita is relevant to the definition of food insecurity. In another study by the same author, it was found that moderate and severe FNI was present in 46.5% of CONSAD households with Average Family Income Per Capita - RMFPC lower than $\frac{1}{4}$ of the Minimum Wage - MW. This prevalence decreased to 24.1% among households with income between half and $\frac{1}{4}$ of MW and to 8.4% among those with RMFPC higher than half the minimum wage (RIBEIRO, 2012).

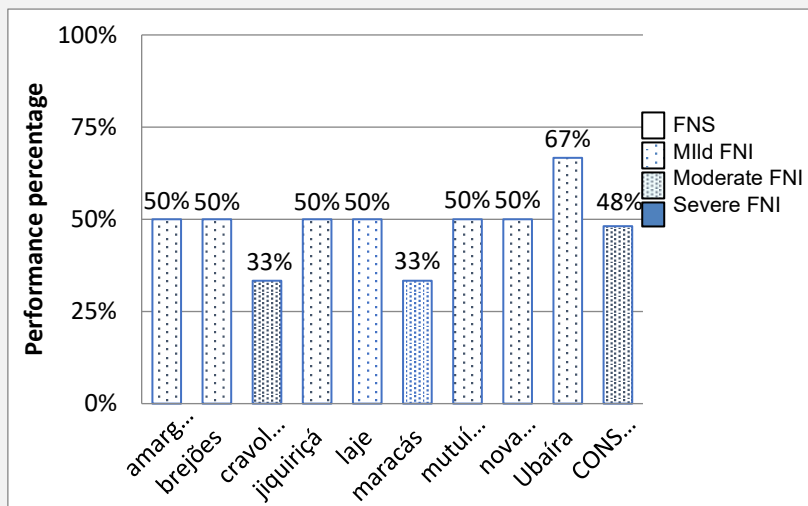
It is observed that the income variable is included in the construction of an indicator for the Access Dimension, and this was the only one in which moderate insecurity was obtained in the territory. Studies carried out by Rossi (2017) in Montevideo on the influence of socio-demographic characteristics on the different dimensions of household food insecurity indicate that family income had greater influence in all dimensions, which indicates a strong relationship between income and insecurity.

Graph 1: FNS evaluation by indicator protocol - Food Availability Dimension



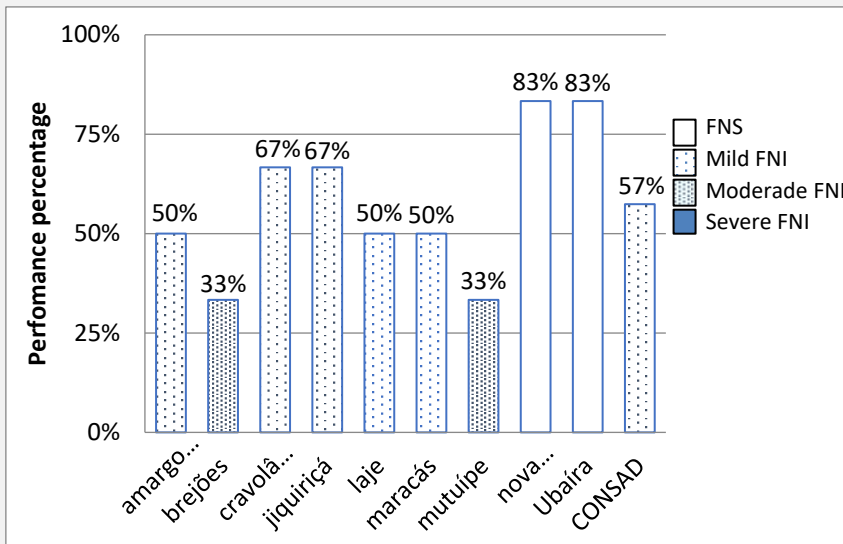
Source: Prepared by the Authors, 2012

Graph 2: FNS evaluation by indicator protocol - Food Access Dimension



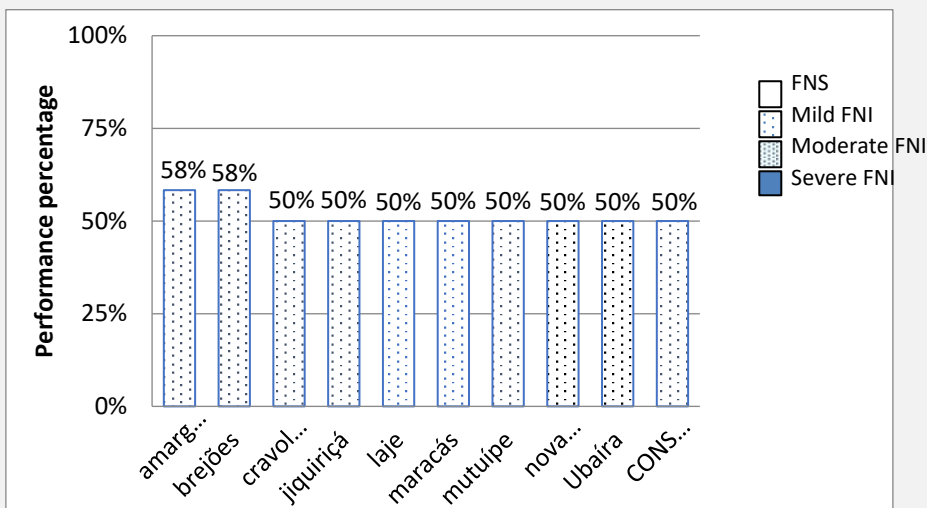
Source: Prepared by the Authors, 2012

Graph 3: FNS evaluation by indicator protocol - Food Consumption Dimension



Source: Prepared by the Authors, 2012

Graph 4: FNS evaluation by indicator protocol - IV Biological Use of Food Dimension



Source: Prepared by the Authors, 2012

Considering the definition for the FNS assessment categories, it is highlighted that mild food and nutritional insecurity, measured by the indicators used, in any of the dimensions, represents the existence of factors that express vulnerability and deprivation, so it is a result that requires action on the part of managers.

The number of people affected by hunger around the world has been increasing slowly since 2014. FAO data shows that the burden of malnutrition in all its forms remains a challenge, the FNS assessment report with projections of how it could be in 2030 show that the world is not on track to reach Zero Hunger by 2030. (FAO, 2020).

3.2 Overall Territory Results

3.2.1. FNS in the dimension of food availability

It is related to aspects related to the local production and marketing of food. This means that, in view of the indicators used, there are no major problems for the population's food supply in terms of food production and distribution.

Factors that contributed to these results were: The existence of access roads to the municipalities and between the Rural and Urban Zones in good conditions, thus facilitating the flow of products produced, which can favor a greater supply of food at a lower cost; Existence of strategies to bring the small producer closer to the consumer due to the existence of a weekly open market, facilitating the access of the lower-income population to food; Existence of a cooperative of small producers, thus favoring an increase in the local supply of food and an increase in the income of small producer families; Diversity of credit lines for small producers, positively reflecting on family farming and self-consumption, increasing family income and ensuring minimum conditions for the maintenance of agricultural activities.

Even having obtained good results in this dimension, the inexistence of warehouses that could guarantee the storage of food to supply the domestic market for at least two months was recorded in the municipalities, ensuring that possible problems that affect production, such as climate change, and commercialization, due to the off-season that raises prices, for example, do not compromise the access of the entire population to food. Results shown by Panelli-Martins et al. (2008) after applying this same Protocol in the municipality of Mutuípe at another time highlighted the inexistence of municipal warehouses for food stock, so that municipalities should have food storage capacity to supply the market internal for at least two months.

3.2.2. In relation to FNS according to the dimension of food access

The Brazilian Demographic Census was the main source for obtaining data and information. According to the results found, the score was 14.1 (48.1% of the possible total) revealing Moderate FNI. The main factor that contributed to this result was the low level of education of the head of the household, assessed as years of study, and education influences not only the chances of getting better pay at work, but also the selection and preparation of food. The income factor of the head of the household also contributed to this result, being associated with the possibility of purchasing and using essential goods and services to maintain health status and purchase food. The results of the municipality

of Mutuípe with the application of the protocol carried out by Panelli-Martins (2008) in this same dimension showed that the factors that contributed to the result were the income of the person responsible for private households and is associated with the use of essential goods and services for maintenance. health status in particular to the purchase of food.

3.2.3. FNS according to the Food consumption dimension

The analysis was based on the following indicators: percentage of breastfeeding, percentage of children with low birth weight, percentage of children under 5 years old with weight deficit for their age, which mostly reflect the results of inadequate food consumption on the growth and development. CONSAD obtained 5 points in this dimension, representing 50% of the possible total, therefore a situation of mild FNI in relation to food consumption. The high percentage of children with low birth weight is related to the maternal nutritional status during pregnancy, directly interfering with the child's health and survival status; A high percentage of children under 5 years of age with weight deficit for their age indicates a state of current malnutrition, reflecting poor health, income, education, and family conditions; The high percentage of exclusive breastfeeding was an important result of the study in defining a mild FNI picture, based on the assumption that it provides qualitatively and quantitatively adequate nutrients for growth. The study by Panelli-Martins (2008) in the municipality of Mutuípe identified the percentage indicator of children with low birth weight, related to maternal nutritional status during pregnancy and predictive of the child's health status and survival; and the percentage indicator of children under 5 years old with weight deficit for their age, which indicates a state of malnutrition, reflecting poor health, income and family education conditions in the municipality.

3.2.4. FNS according to the dimension of the biological use of food

The analysis includes the conditions of access to social, sanitation and health services. Six indicators were used for this dimension. The territory obtained a result of 30 points (50% of the possible total), having been classified as a Mild FNI in this dimension.

The result obtained is due to the deficient coverage of basic sanitation, such as: lack of access to treated water, collection of household garbage and sanitary sewage, so that family exposure to adverse conditions of basic sanitation directly influences the family's health. The result of the study in the municipality of Mutuípe was not different from the result of CONSAD, which indicated a deficient coverage of basic sanitation,

including access to treated water, collection of household garbage and sewage, collaborate with the result (Panelli- Martins, 2008).

It is important to emphasize that the Consortium's infant mortality coefficient contributed to better results in this dimension, based on the premise that this indicator reflects the health conditions of the population in general. It is also worth noting that there is a Family Health Program - PSF implemented and functioning throughout CONSAD and the Community Health Agents (ACS) reach 100% coverage.

Table 3: Assessment of the FNS situation by dimensions in the Jiquiriçá Valley (BA)

Dimension	Maximum score	Score obtained	Score scale (%)	FNS situation
Food availability	60	35.0	58.3	Mild FNI
Access to food	30	14.4	48.1	Moderate FNI
Food consumption	30	17.2	56.7	Mild FNI
Biological use of food	60	30.0	50.0	Mild FNI
Total	180	96.6	53.7	Mild FNI

Source: Prepared by the authors, 2012

4. Final Considerations

This study presents results of the assessment of the FNS situation and its determining factors at the municipal level of the territory of the Consortium for Food and Nutritional Security – CONSAD Jiquiriçá Valley. Food insecurity was a condition present in all evaluated municipalities, most of them in the Situation of Mild Food and Nutritional Insecurity. Analyzing the results based on the protocol, it is possible to identify which variables were compromising the better performance of the CONSAD municipalities in the different dimensions. Results indicated the existence of factors that express vulnerability and risk of deprivation, which, if not faced, can generate greater compromise and risk of moderate and severe insecurity with disabilities in some indicators: lack of warehouses, low education, insufficient responsible person's income, high percentage of children with low birth weight, high percentage of children with low weight for age, deficient coverage of basic sanitation.

The application of indicators as summary measures of certain situations under monitoring and evaluation has been a demand in the production of evidence to guide public policies, such as the health-disease process. Criteria have been proposed to improve the indicators, it being understood that, even if methodological challenges persist, the investment in their application must be continued.

Therefore, the applied method presents itself as an important instrument for evaluation and generates guidelines for public action in the direction of food and nutrition security. The protocol proved to be instrumental in the formulation, monitoring and evaluation of interventions by the municipal executive.

The need for frequent updates of FNS assessment protocols is also highlighted, to monitor political, social and economic changes, which allows for a better interpretation of this condition in the municipalities.

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