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# Findings of evaluative research on the Brazilian Food and Nutritional Security System: A scoping review from 2006 to 2022

## *Resultados de pesquisas avaliativas sobre o Sistema Nacional de Segurança Alimentar e Nutricional: uma revisão de escopo de 2006 a 2022*

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Article elaborated from thesis by ML MACHDO, entitled "A implementação do Sistema Nacional de Segurança Alimentar e Nutricional no contexto dos municípios brasileiros: uma pesquisa avaliativa com enfoque no ciclo das políticas públicas". Universidade Federal de Santa Catarina; 2020.

**How to cite this article:** Machado ML, Gabriel CG, Vasconcelos FAG. Findings of evaluative research on the Brazilian Food and Nutritional Security System: A scoping review from 2006 to 2022. Rev Nutr. 2024;37:e230115. <https://doi.org/10.1590/1678-9865202437e230115>**ABSTRACT****Objective**

This study analyzes the results of evaluative research on the Brazilian Food and Nutritional Security System.

**Method**

Was conducted a scoping review by collecting information from four bibliographic databases: Scientific Electronic Library Online (SciELO), Latin American and Caribbean Literature in Health Sciences (LILACS), National Library of Medicine (MEDLINE/PubMed), and Web of Science. Three researchers systematically selected the studies and extracted data. The researchers categorized the studies included according to an evaluative approach to the topics of financing, social participation, decentralization and government management, and monitoring and evaluation.

**Results**

Were found 1,987 references, 17 of which were selected for analysis. It is presented the evaluation of the System and of its public policy as a developing field permeated by different types of research and methods and which needs to be better qualified in relation to its theoretical and methodological approaches. The results and recommendations of the studies analyzed point out important elements to guide decision-making in relation to the System and its public policy.

**Conclusion**

In view of the recent weakening of the governance structure of this public policy at a national level, this study contributes to the debate on food and nutritional security and its reintegration into the Brazilian governmental agenda.

**Keywords:** Brazil. Evaluation study. Food security. Public policy. Review.

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## RESUMO

### **Objetivo**

*Este estudo analisou os resultados de pesquisas avaliativas sobre o Sistema Nacional de Segurança Alimentar e Nutricional no Brasil.*

### **Método**

*Foi realizado uma revisão a partir da coleta de informações em quatro bancos de dados bibliográficos: Scientific Electronic Library Online (SciELO), Latin American and Caribbean Literature in Health Sciences (LILACS), National Library of Medicine (MEDLINE/PubMed), e Web of Science. Três pesquisadores selecionaram sistematicamente os estudos e extraíram os dados. Os pesquisadores categorizaram os estudos incluídos de acordo com uma abordagem avaliativa sobre os temas de financiamento, participação social e controle, descentralização e gestão governamental, e monitoramento e avaliação.*

### **Resultado**

*Foram encontradas 1.987 referências, das quais 17 foram selecionadas para análise. Apresenta-se a avaliação do Sistema e de sua política pública como um campo em desenvolvimento permeado por diferentes tipos de pesquisa e métodos, e que precisa ser mais bem qualificado em relação às suas abordagens teóricas e metodológicas. Os resultados e recomendações dos estudos analisados apontam elementos importantes para orientar a tomada de decisão em relação ao Sistema e sua política pública.*

### **Conclusão**

*Diante da recente fragilização da estrutura de governança dessa política pública em nível nacional, este estudo contribui para o debate sobre segurança alimentar e nutricional e sua reinserção na agenda governamental brasileira.*

**Keywords:** *Brasil. Estudo de avaliação. Segurança alimentar. Política pública. Revisão.*

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## INTRODUCTION

Food is universally recognized as a fundamental human right, encompassing continuous physical and economic access to safe, nutritious, and sufficient food that meets dietary needs and preferences for an active and healthy life [1]. The concept of food security emerged during the 1996 World Food Summit, where global leaders pledged to promote food security for all and eradicate hunger through the formulation and implementation of effective food security policies [2]. However, despite nearly three decades since the World Food Summit, the prevalence of undernourishment remains a pressing issue, affecting approximately 828 million people [3]. The COVID-19 pandemic, which emerged in 2020, has further exacerbated food insecurity, deepening the persistent effects of the global food crisis experienced in 2007-2008 [1,4]. This complex scenario presents a global syndemic characterized not only by malnutrition and obesity but also by the intersecting challenges of climate change [5]. As such, the importance of robust food security policies becomes evident, necessitating comprehensive evaluations to enhance decision-making processes and achieve more favorable outcomes.

In 2006, Brazil introduced its *Sistema Nacional de Segurança Alimentar e Nutricional* (SISAN, Brazilian Food and Nutritional Security System) with the primary objective of formulating and implementing public policies to safeguard the human right to adequate food, employing an intersectoral governance structure that incorporates organized civil society participation [6]. However, the country has faced significant obstacles since 2016, including international economic crises, political instability, and a governmental agenda marked by fiscal austerity, which have disrupted the stability of the SISAN and food security policies [7]. Consequently, this critical situation has contributed to alarming statistics observed in 2022, amid the COVID-19 pandemic, where 57.8% of Brazilians experienced food insecurity, with 33.1 million individuals enduring hunger [8].

Considering this context, our study conducted a comprehensive analysis of research findings that evaluated the SISAN from its inception until 2022. The aim was to make a substantial contribution to the governance and decision-making processes related to this system during a pivotal phase of reinvigorating of the governmental agenda for food security in Brazil.

## METHODS

This study follows a scoping review methodology, incorporating the concepts and procedures outlined by Arksey and O'Malley [9], who conducted a seminal study on this type of analysis, as well as the guidelines presented by Munn et al. [10], who provided systematic guidelines for conducting scoping reviews. A scoping review is particularly suitable for studies aiming to identify the available evidence within a specific field, evaluate the research methodologies employed, and identify knowledge gaps [9,10]. Consequently, this review method aligns well with the objectives of our study.

To ensure rigor and accuracy, three independent researchers, previously trained in the review process, conducted the search and selection of references based on a predetermined and mutually agreed protocol. This protocol adhered to the guidelines outlined in the PRISMA Extension (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) specifically designed for scoping reviews (PRISMA-ScR) [11]. The protocol encompassed various steps, including defining the research question, determining search terms, selecting appropriate bibliographic databases, establishing inclusion and exclusion criteria, and outlining the procedures for reference selection and data extraction.

### Research question, search terms, and bibliographic databases

The research question that guided this review was "What are the results indicated by evaluative research on the Brazilian Food and Nutritional Security System?" Based on this question, we identified the key terms to be included in the search strategies in bibliographic databases. Our approach prioritized comprehensive coverage with greater sensitivity and lower specificity, allowing us to gather a large number of references for thorough analysis by the three researchers involved in the selection process.

The search in the bibliographic databases encompassed a combination of Portuguese and English search terms pertaining to evaluation, food security policy, and Brazil. Initially, the three researchers independently suggested terms and identified synonyms using online dictionaries. Subsequently, they conducted searches using terms indexed in the Medical Subject Headings (MeSH) and Health Sciences Descriptors (DeCS) databases. These iterative processes resulted in the identification of twenty-three terms related to evaluation, eighteen terms related to food security policy, and two terms specific to Brazil.

Using these terms, we constructed the search strings and performed searches in the following bibliographic databases: Scientific Electronic Library Online (SciELO), Latin American and Caribbean Literature in Health Sciences (LILACS), National Library of Medicine (MEDLINE/PubMed), and Web of Science (Chart 1). The searches were concluded on May 30, 2023.

**Chart 1** – Expressions used for searches in bibliographic databases.

Databases	Search expressions
SciELO	((advic*) OR (analís*) OR (apreciat*) OR (aprecia*) OR (assessment*) OR (avalia*) OR (check) OR (classifica*) OR (classification) OR (consider*) OR (criti*) OR (diagnos*) OR (evalu*) OR (opini*) OR (parecer*) OR (perfil) OR (profile) OR (rank) OR (verifica*)) AND ((caisan) OR (consea) OR ("Food and Nutrition Insecurit**") OR ("Food and Nutrition Securit**") OR ("Food and Nutrition Securit**") OR ("Food Insecurit**") OR ("Food Securit**") OR ("Insegurança alimentar") OR ("Insegurança alimentar e nutricional") OR ("Plano de Segurança Alimentar e Nutricional") OR (pnsan) OR ("Política de Segurança Alimentar e Nutricional") OR ("Política Nacional de Segurança Alimentar e Nutricional") OR ("Segurança Alimentar") OR ("Segurança Alimentar e Nutricional") OR (SISAN) OR ("Sistema Nacional de Segurança Alimentar e Nutricional")) AND ((brasil*) OR (brazil*))
LILACS	((advic*) OR (analís*) OR (apreciat*) OR (aprecia*) OR (assessment*) OR (avalia*) OR (check) OR (classifica*) OR (classification) OR (consider*) OR (criti*) OR (diagnos*) OR (evalu*) OR (opini*) OR (parecer*) OR (perfil) OR (profile) OR (rank) OR (verifica*)) AND ((caisan) OR (consea) OR ("Food and Nutrition Insecurit**") OR ("Food and Nutrition Securit**") OR ("Food and Nutrition Securit**") OR ("Food Insecurit**") OR ("Food Securit**") OR ("Insegurança alimentar") OR ("Insegurança alimentar e nutricional") OR ("Plano de Segurança Alimentar e Nutricional") OR (pnsan) OR ("Política de Segurança Alimentar e Nutricional") OR ("Política Nacional de Segurança Alimentar e Nutricional") OR ("Segurança Alimentar") OR ("Segurança Alimentar e Nutricional") OR (SISAN) OR ("Sistema Nacional de Segurança Alimentar e Nutricional")) AND ((brasil*) OR (brazil*)) AND ( db:("LILACS"))
MedLine/ PubMed	((advicé [all fields]) OR (analyze [all fields]) OR (appreciate [all fields]) OR (apreciação [all fields]) OR (assessment [all fields]) OR (avaliação [all fields]) OR (avaliar [all fields]) (check [all fields]) OR (classifica [all fields]) OR (classification[all fields]) OR (consider[all fields]) OR (critic[all fields]) OR (diagnostic [all fields]) OR (evalu [all fields]) OR (opinion [all fields]) OR (parecer [all fields]) OR (perfil[all fields]) OR (profile[all fields]) OR (rank[all fields]) OR (verifica[all fields])); AND ((caisan[all fields]) OR (consea[all fields]) OR ("Food and Nutrition Insecurity" [all fields]) OR ("Food and Nutrition Security" [all fields]) OR ("Food and Nutrition Security"[all fields]) OR ("Food Insecurity" [all fields]) OR ("Food Security" [all fields]) OR ("Insegurança alimentar"[all fields]) OR ("Insegurança alimentar e nutricional"[all fields]) OR ("Plano de Segurança Alimentar e Nutricional"[all fields]) OR (pnsan[all fields]) OR ("Política de Segurança Alimentar e Nutricional"[all fields]) OR ("Política Nacional de Segurança Alimentar e Nutricional"[all fields]) OR ("Segurança Alimentar"[all fields]) OR ("Segurança Alimentar e Nutricional"[all fields]) OR (SISAN[all fields]) OR ("Sistema Nacional de Segurança Alimentar e Nutricional"[all fields])) AND ((brasil [all fields]) OR (brazil [all fields]))
Web of Science	TS=(Advic* OR Analis* OR Appreciat* OR Aprecia* OR Assessment* OR Avalia* OR Check OR Classifica* OR Classification OR Consider* OR Criti* OR Diagnos* OR Evalu* OR Opini* OR Parecer* OR Perfil OR Profile OR Rank OR Verifica*) AND TS=(Caisan OR Consea OR "Food and Nutrition Insecurity" OR "Food and Nutrition Security" OR "Food and Nutrition Security" OR "Food Insecurity" OR "Food Security" OR "Insegurança alimentar" OR "Insegurança alimentar e nutricional" OR "Plano de Segurança Alimentar e Nutricional" OR Pnsan OR "Política de Segurança Alimentar e Nutricional" OR "Política Nacional de Segurança Alimentar e Nutricional" OR "Segurança Alimentar" OR "Segurança Alimentar e Nutricional" OR Sisan OR "Sistema Nacional de Segurança Alimentar e Nutricional") AND TS=(Brasil* OR Brazil*)

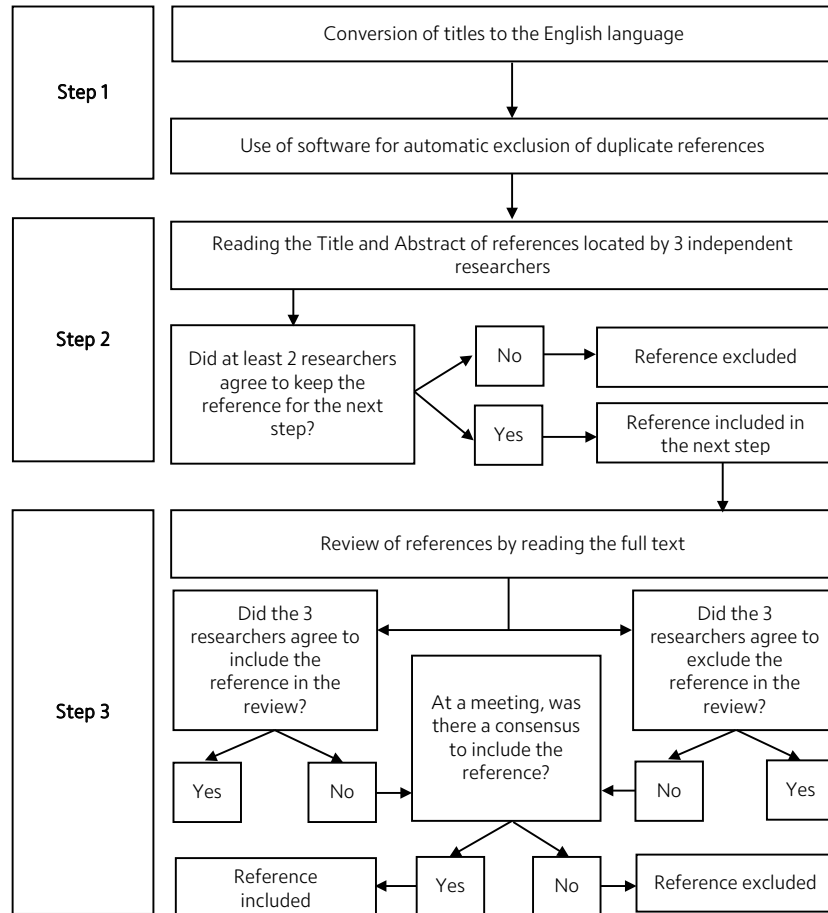
Note: \*In bibliographic databases, the use of an asterisk has the purpose of allowing the search for all terms that begin with the word before the asterisk. CAISAN: *Câmara de Gestão Intersetorial de Segurança Alimentar e Nutricional*; CONSEA: *Conselho de Segurança Alimentar e Nutricional*; LILACS: *Literatura Latino-Americana e do Caribe em Ciências da Saúde*; SciELO: *Scientific Electronic Library Online*; SISAN: *Sistema Nacional de Segurança Alimentar e Nutricional*.

## Inclusion and exclusion criteria, selection of references, and data extraction

We included original empirical scientific studies with data published in English, Portuguese, or Spanish, without restrictions on the publication year or methodology, that focused on evaluating the SISAN or its components during the period from 2006 to 2022. The components of SISAN examined in this study included the *Conselho de Segurança Alimentar e Nutricional* (CONSEA, Food and Nutrition Security Councils), the *Câmaras de Gestão Intersetorial de Segurança Alimentar e Nutricional* (CAISAN, Chambers of Intersectoral Management of Food and Nutritional Security), the Food and Nutrition Security Conferences. Additionally, articles that evaluated the Brazilian Policy on Food and Nutritional Security and its management instruments, such as the Food and Nutrition Security Plans, were also included.

The evaluation studies included in this review were those that presented measurements, described strengths and weaknesses, or provided value judgments on various aspects of SISAN and its public policy based on data collection. Additionally, studies that offered recommendations for improving the System were also considered. We excluded duplicate references, that were not scientific articles (such as books, documents, theses, and dissertations), those that were not available in full text, methodological studies, literature reviews, or critical essays that were not directly related to Brazil, studies with an epidemiological focus that solely diagnosed the status of food security or insecurity and its associations, studies that evaluated policies, programs, or sectoral actions related to food security, and studies that did not align with the research objectives.

To access the full text of the articles, we utilized the databases and journals available through the *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior* (Capes, Coordination for the Improvement of Higher Education Personnel) Journal Portal, using the researcher's university identification. Additionally, we utilized the ResearchGate social network to locate or request the full text of articles. The located references were organized and evaluated in three stages using the EndNote© software (Clarivate Analytics), as illustrated in Figure 1.



**Figure 1** – Flowchart of the process of analysis and selection of references located by the search in bibliographic databases.

In the first stage, all reference titles were converted to their English versions to facilitate the automated recognition and exclusion of duplicate references by the software. In the second stage, the three researchers involved in the study selection process reviewed the titles and abstracts of all references. References that met the inclusion criteria, as assessed by at least two researchers, proceeded to the next stage. In the third stage, the included references were thoroughly reviewed by the three researchers through a complete reading of the documents. They reassessed compliance with the inclusion criteria and checked for any exclusion criteria. References that were unanimously indicated for inclusion or exclusion by the researchers were automatically included or excluded.

References that showed discrepancies among the researchers were discussed in a meeting until a consensus was reached regarding their inclusion or exclusion.

Information regarding authorship and year of publication, study location and year, objective, methodological aspects, unit of analysis, type of data collected, data collection method, description of evaluation criteria and parameters, discussion of strengths and weaknesses, issuance of value judgments, and recommendations pertaining to the SISAN and the National Policy on Food and Nutrition Security were extracted from the articles and organized using Microsoft Office Excel<sup>®</sup> software (Microsoft Corporation).

The articles were also categorized based on their evaluation focus. This categorization was conducted inductively at a semantic level following the conceptualization and thematic analysis procedures proposed by Braun and Clarke [12]. The lead researcher performed a comprehensive reading of all included articles to identify the evaluation topics related to the SISAN. These topics encompassed explicit or surface-level interpretations of the data, without aiming to identify underlying ideas, assumptions, and conceptualizations. The software initially systematized a set of topics and subsequently aggregated them based on similarity, resulting in the following central topics: financing, social participation, decentralization and government management, and monitoring and evaluation.

The synthesis of each article is presented in Table 1, in which the studies are arranged in descending order of the publication year, according to the following information: Authorship and year of publication; Place and year of study; Purpose of the study; Methodological aspects; Unit of analysis; and Data type and form of collection.

## RESULTS

We found 1,987 references and excluded 1,970 articles, resulting in 17 articles in this review (Figure 2).

Among the excluded references, we highlight those with an epidemiological focus referring to the diagnosis of food (in)security and their associations without involving the evaluation of food security policies (n=380), as well as evaluations of programs and sector policies of food security (n=212), with emphasis on the Bolsa Família Program/Emergency Aid (n=103), the National School Meal Program (n=49), and the Food Acquisition Program (n=27). Among the references excluded for not being evaluations or for evaluating other topics or policies (n=662), we highlight the exclusion of 437 studies that referred to food safety and hygiene and of 163 studies that specifically addressed the relationships between agricultural production and food security (Figure 2).

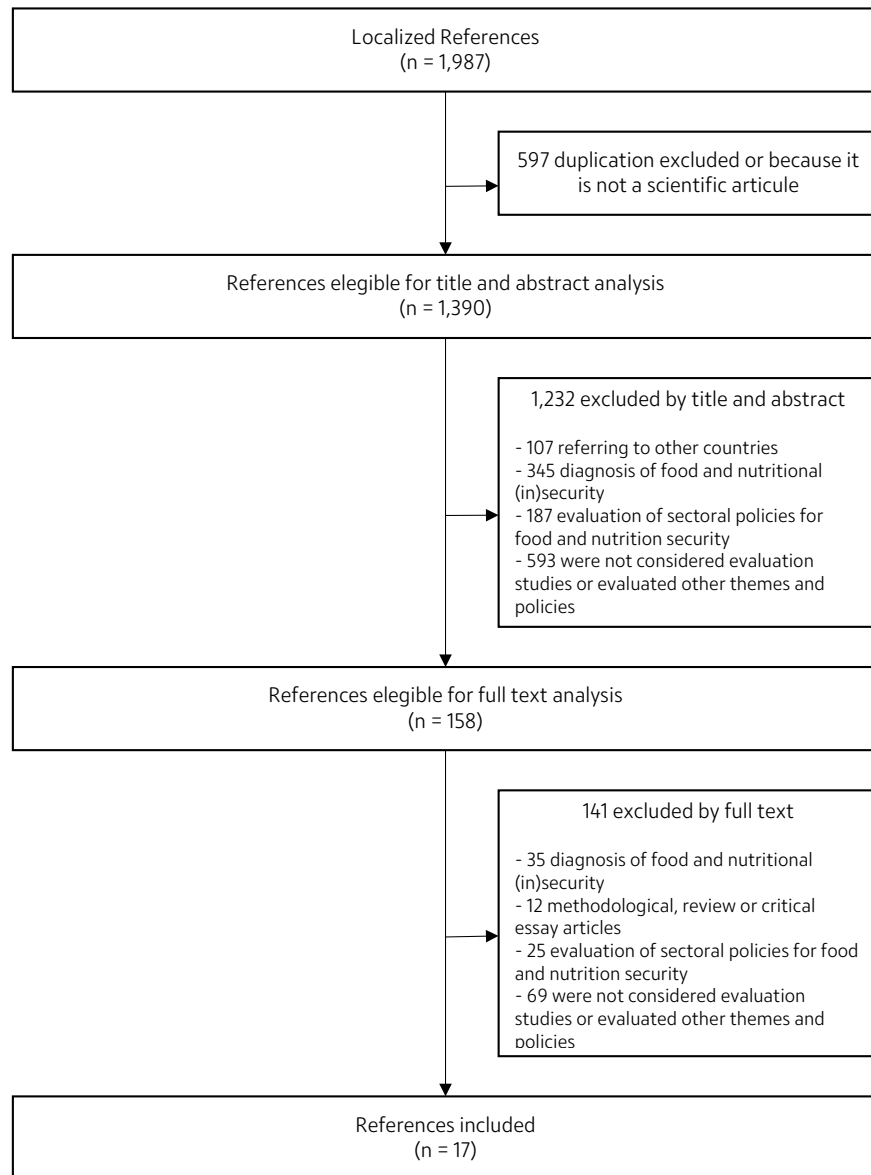
As depicted in Table 1, among the seventeen included articles, eleven were conducted and analyzed using qualitative research methodology, while six employed quantitative research approaches. Seven studies adopted a case study design, five were cross-sectional studies, two were action research projects, and one constituted a longitudinal study that examined resource allocation for food security initiatives between 2004 and 2010. Additionally, one study presented a methodological proposal for evaluating food security plans. In terms of data collection methods, eleven studies relied on documentary analysis, seven conducted interviews, four accessed secondary databases, two employed observation techniques, and one utilized focus groups and concept map construction (Table 1).

**Table 1** – Objectives and methodological aspects of the studies included in the scoping review.

Authorship and publication year	Place and year of study	Purpose of the study	Methodological aspects	Unit of analysis	Data type and form of collection
Martins et al. (2023)	26 states (2017-2018)	Analyze the multiple characteristics of the decentralization of the SISAN in a period before the institutional dismantling	Qualitative Exploratory Descriptive analysis	States	Secondary IBGE Estadac Database Mapping of Food and Nutritional Security
Orthmann et al. (2022)	26 state capitals (Until 2021)	Identify and characterize the legislation published in Brazilian capitals regarding food and nutritional security	Qualitative Exploratory Descriptive analysis	State legislations	Primary Documentary
Moraes, Machado and Magalhães (2021)	Brazil (2012-2016)	Analyze the Intersectoral Chamber for Food and Nutritional Security performance in the intersectoral coordination of politics in the federal government	Qualitative Content analysis Case study	Brazilian Intersectoral Chamber for Food and Nutritional Security	Primary Literature review Documentary Interviews
Moraes, Machado and Magalhães (2021)	Brazil (2006-2016)	Examines the role of Brazilian Food and Nutritional Council in coordinating the food and nutrition security policy in Brazil	Qualitative Content analysis Case study	Brazilian Food and Nutritional Council	Primary Literature review Documentary Interviews
Oliveira et al. (2021)	Brazil (2003-2019)	Examines official Brazilian documents regarding such monitoring and evaluation	Qualitative Descriptive analysis	Official documents	Primary Documentary
Palmeira et al. (2020)	Cuité, PB (2011-2014)	Identify and analyze government initiatives related to food security	Qualitative Case study Content analysis	Municipality	Primary Documentary Interview
Medeiros et al. (2019)	45 cities in Rio Grande do Norte (2016-2018)	Understand the challenges of municipal public management to implement the SISAN in relation to governance practices	Qualitative Action research Content analysis	Municipality	Primary Documentary Observation
Aliaga, Chaves-Dos-Santos and Trad (2019)	Salvador, BA (2014-2016)	Analyze the perceptions of community leaders and residents of a popular neighborhood about the State's performance in food security	Qualitative Action research Analysis based on interpretative anthropology	Neighborhood	Primary Conceptual map Focal group
Vasconcellos and Moura (2018)	27 states and 2,491 cities (2014)	Analyze the situation of decentralization of the SISAN to states and municipalities	Quantitative Transversal Descriptive analysis Association tests	Municipal and State Council for Food and Nutritional Security	Secondary IBGE State and Municipal Databases
Machado et al. (2018c)	Santa Catarina (2016)	Identify potentialities and limits for the execution of the State Food and Nutritional Plan	Qualitative Case study Analysis through Collective Subject Discourse	Food and Nutritional Plans	Primary Interview
Machado et al. (2018b)	27 states (2016)	Analyze the adequacy of Food and Nutritional Plans to the standards established by National Policy on Food and Nutrition Security	Quantitative Transversal Descriptive analysis	Food and Nutritional Plans	Primary and Secondary Documentary IBGE Estadac Database
Machado et al. (2018a)	Santa Catarina (2016-2017)	Check the relevance of the Food and Nutritional Plan to the Brazilian concept of food security	Methodological Quantitative Transversal Evaluative Case study Strategic analysis	Food and Nutritional Plans	Primary Documentary
Muniz et al. (2017)	9 cities in Maranhão (2015)	Analyze social participation in the food security policy	Qualitative Case study Thematic analysis	Municipal Council for Food and Nutritional Security	Primary Interview
Custódio, Yuba and Cirillo (2013)	Brazil (2004-2010)	Describe the evolution and distribution of Union resources to programs and actions that fall within the Brazilian guidelines of National Policy on Food and Nutrition Security	Quantitative Longitudinal Descriptive analysis	Federal Budget	Secondary Transparency Portal
Rocha et al. (2012)	São Paulo, SP (2008-2009)	Analyze the functioning and organization of the Municipal Food and Nutritional Council and implications for the process of constructing a municipal food security policy	Qualitative Case study Observational Does not indicate the type of analysis	Municipal Council for Food and Nutritional Security	Primary Documentary Observation Interview
Siqueira et al. (2011)	Espírito Santo (2003-2007)	Assess the social control of the Food and Nutrition Security Council of Espírito Santo in relation to the food security state policy	Quantitative Transversal Descriptive analysis	State Council for Food and Nutritional Security	Primary Documentary
Wendhausen, Barbosa and Borba (2006)	Itajaí, SC (2004-2005)	Map resources for empowerment/ participation in four municipal management councils	Quantitative Transversal Descriptive analysis	Municipal Council for Food and Nutritional Security	Primary Documentary Interview

Note: SISAN: *Sistema Nacional de Segurança Alimentar e Nutricional*.





**Figure 2** – Flowchart of the results found after searching the bibliographic databases.

Regarding the analyses, the studies employed content analysis, interpretative anthropological analysis, thematic analysis, collective subject discourse, strategic analysis, and descriptive analysis (Table 1). Four studies evaluated aspects of the SISA and the Brazilian Policy on Food and Nutritional Security at the federal level, while the remaining studies focused on evaluation at subnational levels (Table 1).

Only one study described objective criteria and parameters for assessing value regarding the evaluated object. In the remaining studies, the evaluation took place in a descriptive manner, without explicitly defining criteria and parameters (Table 1). Regarding evaluative approaches, six articles addressed aspects of financing, seven addressed participation and social control, three addressed decentralization and government management, and six addressed monitoring and evaluation (Table 1).



## DISCUSSION

In recent decades, considerable resources have been invested in developing approaches and techniques to enhance decision-making in the field of food security [13]. However, the complex nature of food security policies poses significant challenges for their governance. In this context, the analysis of the evaluative studies found in this scoping review enabled the identification of significant contributions to decision-making regarding aspects of financing, social participation, decentralization and government management, and monitoring and evaluation of the SISAN and the Brazilian Policy on Food and Nutritional Security. We address these contributions in specific sections below.

### Financing

A significant shift in financial resources for social policies in Brazil, including the SISAN and the Brazilian Policy on Food and Nutritional Security, occurred from 2015 onwards due to the global economic crisis. This situation was further exacerbated from 2017 onwards with the institutional and democratic rupture resulting from the impeachment of President Dilma Rousseff and the implementation of a conservative and neoliberal agenda during the administrations of Presidents Michel Temer and Jair Bolsonaro [6].

Between 2004 and 2010, federal resources for programs related to food security gradually increased, and by 2014, the majority of states had their own resources to finance this policy. However, in 2017, there was a 76% cut in federal government resources for food security actions compared to 2014. From 2018 onwards, there were cuts of at least 67% in nine programs and goals of the Brazilian Policy on Food and Nutritional Security [6,14-16].

Studies have indicated that the financing of SISAN and the Brazilian Policy on Food and Nutritional Security faced constraints prior to 2015. These limitations were primarily associated with a decentralization to the subnational level without effective regulation of financing mechanisms and co-responsibility among federal entities (municipalities, states, and the Union). Between 2000 and 2015, there was a downward trend in decentralized resources from the federal government, necessitating increased investments by states and municipalities in food security policies [14]. However, in 2014, only 13.5% of municipalities had their own budget for food security, and less than half of the states allocated resources to CAISAN [16]. Given the significant socioeconomic disparities among Brazilian municipalities, financial support from the Union and states is crucial for strengthening food security actions, especially in vulnerable municipalities [17].

Regarding governance at the state and municipal levels and its implications for financing, Medeiros et al. [18] highlighted that municipal managers are unaware of the available resources for food security actions. At the state level, only 38% of the Food and Nutritional Security Plans mentioned the sources of funding for all established goals, which limits the capacity to implement planned actions [16]. The lack of budgetary linkage in these plans is a significant problem for the financing of SISAN and its public policy [19].

The lack of specific government resources for food security policy, the absence of robust institutional mechanisms to ensure budgetary allocation and establish stable financing, along with the lack of technical support to train and guide state and municipal managers, are limitations that affect the consolidation and strengthening of SISAN [15,16,19]. Budgetary constraints and fiscal austerity that have characterized recent years in Brazil have posed significant challenges to

combating food insecurity, hunger, and poverty in the country [6]. Reversing this situation relies on reintegrating food security into the public budget and aligning economic policies with social policies.

Custódio et al. [14] emphasized the importance of concentrating resources on programs such as *Bolsa Família*, National School Feeding Program, family farming, and sustainable fishing due to their positive effects on food security. However, it is also necessary to increase resources for programs that promote productive autonomy, as well as provide technical and financial support to states and municipalities for the effective implementation of the Brazilian Food and Nutritional Security Policy [14, 6]. Another recommendation from the studies is to conduct further research to assess the effectiveness of expenditures related to the policy and the resources used in the implementation of Food and Nutritional Security Plans [14,16].

## Social Participation

This scoping review identified articles that addressed various issues related to social participation in the SISAN. The first issue is that social participation is largely limited to areas with CONSEA [18], indicating the difficulty of incorporating food security as a societal demand regardless of the institutionalization of social participation. Rocha et al. [20] highlighted that the complexity of the food security issue and its limited integration within society hinder participation and the addressing of social demands. Additionally, Aliaga et al. [21] observed that the population is unaware of public policies on food security or harbors skepticism about their capacity for social transformation. They also found that community leaders feel individually responsible for ensuring food security within their families, necessitating a process of education to help these individuals recognize adequate nutrition as a human right that should be guaranteed by the state, governments, and society [21].

The difficulty of social participation in food security in Brazil can be justified by an environment marked by weak mechanisms of representative democracy that make little progress in consolidating participatory democracy [20,22]. The dissolution of the National CONSEA in 2019 through a unilateral act of the President of the Republic exemplifies the fragility of social participation institutions in Brazil [23], resulting in a reduction of spaces for social participation in propositional and decision-making processes, as well as creating barriers for non-governmental organizations and entities in shaping public policies on food security in Brazil [24].

The National CONSEA presents itself as an important forum for the formulation of public policies targeting various population segments and the affirmation of the right to food, particularly among the most vulnerable, despite the challenges in influencing the Legislative and Executive branches with greater decision-making power, especially in issues that involve strong economic interests, such as the regulation of pesticide use and the food industry [25].

The strengthening of social participation in the governance of SISAN requires that the Councils overcome excessive discussion on organizational aspects and, consequently, the dilution of propositional agendas [26]. Many Councils are characterized by an “intellectualized” profile, and in general, there is a rigid operational dynamic that makes CONSEAs less participatory and depoliticized [20]. It is also necessary to address irregularities in meeting frequency, high turnover of councilors, flaws in electoral processes, and limitations related to power distribution [20,22,26,27]. Additionally, councilors face difficulties in reconciling participation in multiple Councils and Delegated Forums [22].

The lack of structure and other resources for Council functioning [26,27] is also noteworthy, as well as the observation that irregular functioning of the National CONSEA can affect state and municipal Councils by forcing them to operate without institutional reference at the higher level of government [20].

The absence or fragility of training and education processes for councilors appears to be a central issue identified in the analyzed studies [20,22,26,27]. The studies recommend that councilor training be based on critical pedagogical theories and foster autonomy, empowerment, and emancipation within an educational process that considers all dimensions of food security [20,26,27].

## **Decentralization and Government Management**

The decentralization of public policies in Brazil since the 1990s is considered an appropriate measure as it has helped overcome barriers in implementing local policies. However, decentralization has its limits when the political, administrative, social, cultural, and ecological characteristics of different regions in Brazil are not taken into account [17,28].

The decentralization process of SISAN to the state level occurred rapidly due to a robust public policy [14]. By 2014, all states had joined SISAN [16] and had management structures such as CONSEA and CAISAN [15,16]. In 26 states, food security policy was linked to sectoral secretariats or other public policies, primarily in the field of social assistance, and CAISAN consisted of an average of 11 government agencies, mainly representatives from agriculture, education, health, social assistance, planning, and housing [15,16]. In the states, the main actions related to food security focused on food education, training for organic production, maintenance of public food security facilities, implementation of water access technologies, and food donations [15].

However, in 2014, only 30% of states had published their organic laws on Food and Nutritional Security, and only 48% had a specific area for managing food security policy [15]. By 2016, less than half of the states had developed their Food and Nutritional Security Plans, and among the states that had plans, all exhibited regulatory inadequacies, such as the lack of analysis of the local food security situation, absence of goals, lack of details regarding responsible and budgetary requirements for the goals, and no description of the methodology for monitoring and evaluating the plan and food security [16].

Martins et al. [28], in grouping Brazilian states into clusters of similarity regarding different aspects of decentralized SISAN governance, identified that states with a higher intersectoral and participatory character in SISAN governance were the same ones with better relationships with their municipalities and better resource allocation. Conversely, states with a lower intersectoral and participatory character were associated with low resource allocation and implementation of food security actions, as well as weak support for SISAN decentralization at the municipal level. Clusters predominantly composed of states in the North and Northeast, with lower Gross Domestic Product, medium Human Development Index, and higher occurrence of food insecurity, expressed characteristics that may be related to greater obstacles in decentralization.

Vasconcellos and Moura [15] conducted an analysis of the decentralization of SISAN to municipalities and identified low adherence to the system and an insignificant proportion of municipalities with CAISAN and Food and Nutritional Security Plans. The main food security actions carried out by municipalities were the maintenance of public food security equipment, implementation of technologies for water access, and urban agriculture activities [15]. The size of the municipality is positively associated with the existence of management structures for food security policy. Therefore,

small municipalities tend to face greater difficulties in implementing food security actions [15]. A case study in a small rural municipality identified 33 government initiatives for food security in the municipality, but none were linked to SISAN structures or socially recognized as part of the National Food and Nutritional Security Policy [17].

The problems related to decentralization and management of food security policy can be attributed to several factors. Vasconcellos and Moura [15] highlight the fragility of institutional responsibilities at the state and municipal levels and the absence of a significant inducing role by the federal government. They also mention the high turnover of officials and the lack of incentives for capacity building among managers, as well as the absence of operational plans for implementing SISAN and its public policy at the local level. Medeiros et al. [18] further emphasize the need for operational plans to effectively implement SISAN at the local level and address issues of food security. Aliaga et al. [21] found that community leaders perceive a lack of commitment from the state to promote food security and ensure food as a human right. This perception stems from historically constructed oppressive systems, where there is an interest in maintaining poverty, hunger, and food insecurity.

The studies recommend greater technical and financial support from the federal government to strengthen state and municipal management [16]. They also advocate for the development of more effective decentralization mechanisms to expand the number of municipalities adhering to SISAN and actively engaging with the National Food and Nutritional Security Policy [15]. Additionally, there is a need for managers to evaluate their own performance in implementing this public policy [18].

## Monitoring and Evaluation

Medeiros et al. [18] highlight difficulties in collecting and disseminating information about SISAN and the Brazilian Food and Nutritional Security Policy, which strongly impacts the governance of this system. The authors specifically address the challenges related to the Food and Nutritional Security Mapping, reporting that the data collection methodology is confusing for managers, who struggle to fill in the information in the tool.

Moreover, there is limited information dissemination and ineffective communication between government institutions and social actors [22], along with outdated secondary data and discrepancies among national databases, which hinder the provision of accurate information [16]. Therefore, there is a need to expand and enhance the monitoring process of SISAN through theoretical and methodological advancements that can support the management and improvement of public policies [16,29].

Studies also point out limitations and recommendations for the evaluation processes of SISAN and the National Food and Nutritional Security Policy. Oliveira et al. [24] emphasize the importance of CONSEA, CAISAN, and intersectoral collaborations for advancing participatory strategies in planning, monitoring, and evaluation within the scope of SISAN. However, evaluative studies on SISAN are still scarce, highlighting the need to advance the consolidation of evaluation processes to generate evidence of the effectiveness of actions and, simultaneously, enable learning that can enhance public policies [16,29,30].

Among the methodological proposals for evaluation within the scope of SISAN, the work of Machado et al. [31] presented a matrix consisting of 7 dimensions, 16 sub-dimensions, and 35 indicators to assess the adequacy of Food and Nutritional Security Plans to the Brazilian concept of food security. This proposal provides objective parameters for value judgment in the evaluation

of the Plans. The research by Magalhães [30], although not included in this review due to being a methodological article, relied on theory-oriented evaluation to construct and present an evaluation matrix composed of three dimensions: theory validity, process and effects evaluation, and scope, with a focus on evaluating the implementation of multi-strategy programs that can be applied to assess the National Food and Nutritional Security Policy.

## CONCLUSION

This is the first study that aimed to gather and discuss the results of evaluative research on SISA and the Brazilian Food and Nutritional Security Policy. We observe a field of knowledge still in development, permeated by different types of research and methods for data collection and analysis.

In the face of recent structural dismantling of this System and the renewed government agenda on food security in Brazil, the results and recommendations from the analyzed articles presented important elements for the improvement of SISA and its public policy regarding aspects of funding, social participation, decentralization and government management, as well as monitoring and evaluation.

Undoubtedly, there are still significant gaps to be filled by evaluative research on food security in Brazil. Therefore, it is suggested that further research be conducted to enhance the theoretical and methodological frameworks for the evaluation of SISA and contribute to the improvement of the governance of this System.

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