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Food and nutrition security policies in Brazil and Mozambique: a comparative documentary and lexical analysis

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Abstract

Background

Food and nutrition security remains a major global challenge, intensified by social inequalities, climate vulnerability, institutional fragility and uneven access to food systems. Brazil and Mozambique share structural challenges related to hunger, poverty, intersectoral governance and the territorial implementation of public policies. This study compared official food and nutrition security policy documents from both countries to identify common elements, institutional differences and conceptual emphases.

Methods

This was a comparative, documentary and qualitative study based on lexical and similarity analysis. The corpus consisted of key normative documents on food and nutrition security in Brazil and Mozambique, including the Brazilian Organic Law on Food and Nutrition Security, the National Food and Nutrition Security Policy and Mozambique's Food and Nutrition Security Policy and Strategy 2024–2030. The texts were standardised and analysed using IRAMUTEQ®, allowing the identification of lexical co-occurrences and thematic nuclei. Similarity trees were interpreted through graph theory and compared according to their conceptual structures.

Results

In Mozambique, the main lexical nuclei were organised around institutional commitment, resource mobilisation, strategic pillars, multilevel coordination, governance, production, access, nutrition and food education. In Brazil, the central nuclei were related to the human right to adequate food, normative institutionalisation, SISAN, federative planning, intergovernmental agreement, monitoring and evaluation. The findings indicate that both countries frame food and nutrition security as a multidimensional policy field requiring coordination across agriculture, health, education, social protection, governance and territorial implementation.

Conclusions

Brazil and Mozambique show important convergences in their food and nutrition security policy frameworks, particularly regarding intersectorality, strategic planning and the need for monitoring. However, they differ in the degree of formal institutionalisation: Brazil has a more consolidated legal and participatory framework, whereas Mozambique emphasises multilevel coordination, resource mobilisation and the strengthening of implementation capacity. The study highlights that effective food and nutrition security policies require stable funding, information systems, social participation and adaptation to territorial vulnerabilities.

Background

Food security is a first-order global challenge affecting all continents, both in contexts of abundance and in contexts of food scarcity [1, 2]. Regular access to nutritious, safe and culturally appropriate food is recognised as a fundamental human right, and its fulfilment depends on integrated public policies addressing food systems, production chains, markets and social protection [3, 4]. At the global level, climate change, economic crises, pandemics and conflicts have intensified food insecurity and placed additional pressure on national policy frameworks [5–7].

In Africa and Latin America, food and nutrition security is shaped by institutional fragility, poverty, rural-urban inequalities, climatic vulnerability and infrastructural constraints. In Latin America and the Caribbean, millions of people continue to face hunger despite the region's agricultural production capacity [8]. In sub-Saharan Africa, food insecurity remains historically high and is aggravated by severe droughts, seasonal variability and economic restrictions [7, 9].

Mozambique recently approved the Food and Nutrition Security Policy and Strategy (PESAN 2024–2030), through Resolution No. 60/2024 of 15 October 2024, as a new framework designed to replace previous instruments and respond to contemporary national challenges [10]. Officially launched in 2025, the policy represents an important step in strengthening multisectoral coordination for food and nutrition security. Its implementation is expected to require substantial investments and stronger institutional capacity at national, provincial and district levels [10].

PESAN is guided by principles such as universality, equity, sustainability, intersectorality, social participation, efficiency, effectiveness, transparency and accountability. These principles seek to consolidate a more integrated, inclusive and resilient food and nutrition system, able to respond to socioeconomic and environmental challenges affecting food security in Mozambique [10]. Food insecurity in the country is also monitored through the Integrated Food Security Phase Classification (IPC), which provides a standardised framework for classifying the severity and magnitude of acute food insecurity and malnutrition to support evidence-based decision-making [11, 12].

Brazil has one of the largest Black populations outside the African continent, and a substantial share of this population experiences social vulnerability, territorial exclusion and unequal access to food systems [13]. The trajectory of hunger-related programmes in Brazil includes several milestones, from early food policy initiatives to the Zero Hunger strategy, the institutionalisation of the National Food and Nutrition Security System (SISAN), and the consolidation of the Brazilian Food Insecurity Scale (EBIA) as a tool for assessing household food insecurity [14–21].

Brazil's food and nutrition security framework advanced institutionally through the Organic Law on Food and Nutrition Security (LOSAN), the National Food and Nutrition Security Policy (PNSAN), the Food Acquisition Programme (PAA), the National School Feeding Programme (PNAE), the reformulation of the Unified Registry (Cadastro Unico) and the constitutional recognition of the human right to food [22–29]. However, recent decades have also been marked by setbacks, including the weakening of participatory governance, the dismantling of the National Council for Food and Nutrition Security (CONSEA) and the resurgence of hunger during periods of austerity, political instability and the COVID-19 pandemic [30–32].

The comparison between Brazil and Mozambique is relevant because both countries recognise food and nutrition security as a multidimensional problem requiring multisectoral action, territorial implementation and coordination across governance levels. Nevertheless, they differ in institutional history, legal consolidation, policy instruments, data systems and implementation capacity. This study therefore analysed the guidelines of food and nutrition security policies in Mozambique and Brazil to identify the central elements that converge between the two countries and the main institutional and conceptual differences between their policy frameworks.

Methods

This comparative study was designed as a qualitative documentary and lexical analysis grounded in computer-assisted textual analysis and graph theory [33]. The analysis focused on official public documents that structure food and nutrition security policy in Brazil and Mozambique. Three national documents were selected: (i) the Organic Law on Food and Nutrition Security (LOSAN), Law No. 11.346 of 15 September 2006, in Brazil [27]; (ii) the National Food and Nutrition Security Policy (PNSAN), Decree No. 7.272 of 25 August 2010, in Brazil [34]; and (iii) the Food and Nutrition Security Policy and Strategy (PESAN 2024–2030), approved by Resolution No. 60/2024, in Mozambique [10].

The documents were obtained from official public sources, including Brazilian and Mozambican legal repositories and institutional databases. They were converted into plain text files and subjected to textual standardisation, including orthographic normalisation, removal of accents, standardisation of spelling and exclusion of function words. Lemmatization and stemming were not applied, in order to preserve the original lexical forms used in the normative texts.

Lexical analysis was conducted using IRAMUTEQ®, version 0.8 alpha 7, which allowed the construction of similarity trees based on the co-occurrence of active lexical forms [35]. Co-occurrence was defined using two-word windows, and only terms with a minimum frequency of five occurrences were considered. The resulting networks were generated using the Fruchterman-Reingold algorithm, according to the software's standard procedures, allowing the identification of lexical nuclei and their structural relationships. Clusters were named according to the terms with the highest frequency, centrality and interpretive relevance within each nucleus.

To compare the structures of the Brazilian and Mozambican policy texts, the similarity trees were exported in Newick format and analysed in R, version 4.4.3 [36]. Robinson-Foulds distance was used to measure topological differences between the two lexical structures, with support from the ape and TreeDist packages [37, 38]. This metric assesses structural similarity by counting partitions that are exclusive to each tree. Visual side-by-side inspection was also conducted using the ggtree package, providing a complementary qualitative interpretation of lexical groupings [39].

Ethics committee approval was not required because the study was based exclusively on public official documents and did not involve human participants, personal data, interviews, medical records, biological samples or identifiable information. This approach is consistent with the Brazilian National Health Council Resolution No. 510/2016, which exempts studies based exclusively on public-access information from ethics review [40].

Results

Food security public policies in Mozambique

In Mozambique, food and nutrition security policy is inseparable from the country's post-independence agrarian trajectory and from the long-standing centrality of agriculture in national development. The post-independence period was marked by attempts to reorganise rural production and to redefine the role of the state, the peasantry and the private sector in agricultural development. These transformations created the historical background against which contemporary food and nutrition security policies were later institutionalised [41].

To contextualise the Mozambican corpus, Fig. 1 summarises the main political, institutional and strategic milestones in the trajectory of Food and Nutrition Security (FNS) policy in Mozambique, from post-independence agrarian reorganisation to PESAN 2024–2030.

Source: Authors' elaboration based on Mozambique's FNS policy documents, ESAN II/PASAN, SETSAN documents and PESAN 2024–2030.

Figure 2 presents the similarity tree of the Mozambican Food and Nutrition Security Policy and Strategy. The tree reveals a policy vocabulary structured around commitment, resources, strategic pillars, governance, multilevel coordination, nutrition, education and institutional centrality.

Source: Authors' elaboration using IRAMUTEQ.

National commitment and mobilised resources

The cluster centred on "commitment" connected terms such as "resource", "mobilisation", "food", "implementation", "programme" and "FNS". This grouping suggests that the institutional commitment expressed in Mozambican policy is not merely declaratory. It is associated with concrete requirements for financial, logistical and human resources, as well as with the mobilisation of governmental and institutional actors to implement food and nutrition security

programmes. The connection between “commitment”, “programme” and “FNS” highlights the dependence of the policy on implementation capacity and resource allocation.

Strategic pillars: production, access, social strengthening and governance

Another cluster brought together the terms “pillar”, “production”, “sustainable access”, “governance”, “investment”, “social protection” and “information”. This cluster expresses the systemic architecture of the policy. Sustainable production refers to how food is generated; access points to the social and territorial conditions that shape consumption; governance and investment refer to the mechanisms through which policy direction and resources are organised; social protection works as a buffer for vulnerable groups; and information supports transparency, monitoring and decision-making. Together, these terms indicate that the Mozambican policy frames food and nutrition security as a multidimensional and operational challenge.

Political and administrative dimensions: provinces, districts and the private sector

The cluster including “provincial”, “district”, “private sector”, “guarantee”, “political”, “agriculture”, “SETSAN” and “PESAN” points to the articulation of administrative scales and policy actors. It suggests that effectiveness depends on multilevel coordination, from national institutions to provinces and districts, and on the involvement of public and private actors. The term “guarantee” reinforces the obligation to ensure that policy commitments reach territorial levels where implementation occurs.

National promotion: strategy, development and increased production

The cluster marked by “national”, “promote”, “increase”, “strategy” and “development” reflects the idea of a national strategy oriented towards increasing food production, strengthening availability and aligning food and nutrition security with broader development goals. This cluster indicates that the policy is not limited to isolated local projects but is situated within a broader national development agenda.

Food security and the nutritional dimension

The grouping around “food”, “nutrition”, “policy”, “framework”, “evaluation” and “security” represents the technical-conceptual core of the policy. It demonstrates that food and nutrition security is not restricted to food supply; it also includes nutritional quality, health, monitoring and the prevention of deficiencies. The nutritional dimension therefore requires coordination with the health sector and with systems that monitor the population’s nutritional status.

Education and institutional centrality

The cluster linking “education”, “level”, “central” and “involve” highlights the role of food and nutrition education and central institutional coordination. This suggests that long-term policy impact depends on continuous education, training, awareness raising and the involvement of citizens and local actors, while the central government retains a strategic role in setting national guidelines and supporting regional and local implementation.

Food security public policies in Brazil

Figures 3 and 4 present the empirical findings on Brazilian public policies related to food and nutrition security. Figure 3 summarises major milestones in the construction, dismantling and recent resumption of food and nutrition security policies in Brazil, while Fig. 4 presents the similarity tree generated from Brazilian policy documents.

Source: Authors’ elaboration based on Brazilian food and nutrition security policy documents and secondary literature.

Source: Authors’ elaboration using IRAMUTEQ.

The human right to adequate food

In the central conceptual cluster, the term “right” was closely connected to “human”, “food” and “adequate”. This grouping shows that Brazilian food and nutrition security policy is anchored in a normative understanding of food not merely as a welfare intervention or assistance programme, but as an inherent dimension of human dignity. In this framework, every person should have regular access to food in sufficient quantity and quality, in culturally appropriate and healthy forms, and the state has a legal and institutional responsibility to guarantee this right.

Food and nutrition security

A second cluster brought together the terms “security”, “food” and “nutrition”. This triad represents the operational definition of the policy: the availability of food is not sufficient unless access is stable and the food consumed contributes to adequate nutrition and health. The cluster indicates that Brazilian policy links production, distribution and consumption with health and nutrition criteria.

Institutional norms: decree, national framework, SISAN and municipalities

In the institutional nucleus, “decree” was connected to “national”, “SISAN” and “municipality”. This connection symbolises the role of Decree No. 7.272/2010 in regulating the Brazilian food and nutrition security law, establishing PNSAN and structuring SISAN. It also shows the relationship between the federal

sphere and local implementation, defining responsibilities and procedures for federative participation.

Planning and management: PNSAN, policy, goals, management and federative agreement

The cluster formed by “PNSAN”, “policy”, “management”, “goal”, “federative entity” and “agreement” reflects the planning and governance environment through which national guidelines are translated into operational commitments. The policy depends on concrete goals, shared management and intergovernmental agreements among federal, state and municipal actors.

Monitoring, evaluation and implementation

The cluster formed by “monitoring”, “evaluation”, “situation”, “priority”, “implementation” and “duty” expresses the control and accountability dimension of the Brazilian framework. Planning is not sufficient: the policy must be monitored, evaluated and adjusted in order to fulfil the human right to adequate food. The term “duty” reinforces the ethical, political and legal obligation of the state to define priorities and ensure implementation.

Local planning and direction

The cluster comprising “FNS”, “plan”, “local” and “director” refers to policy operationalisation at the municipal and territorial levels. It indicates that national policy needs to be translated into local plans and adapted to specific territorial realities. This cluster highlights the decisive role of local governance in making food and nutrition security policy effective.

Discussion

The findings show that food and nutrition security policies in Brazil and Mozambique share a multisectoral and interinstitutional orientation. In both countries, FNS is framed as an agenda that requires coordination among agriculture, health, education, environment, social protection and governance sectors. In Brazil, SISAN institutionalised intersectoral coordination through mechanisms involving government and civil society, including CAISAN and participatory councils [28, 35]. In Mozambique, PESAN 2024–2030 emphasises multisectoral collaboration, multilevel implementation and the involvement of provincial, district and private-sector actors [10].

Intersectorality is therefore central to both policy frameworks, but it is not achieved automatically. As shown in the Brazilian literature, intersectoral food and nutrition security policy requires permanent institutional mobilisation, political leadership, integration of information systems, coordination across agendas and mechanisms capable of overcoming bureaucratic fragmentation [42]. This helps explain why both countries emphasise governance, monitoring and implementation capacity as essential elements of policy effectiveness.

The human right to adequate food is a major conceptual point of convergence, although it appears with different degrees of legal and institutional consolidation. In Brazil, the right to food is explicitly embedded in the constitutional and legal architecture of LOSAN, SISAN and PNSAN [28, 35]. In Mozambique, the recent policy framework also recognises the state’s responsibility to guarantee food and nutrition security, but the challenge lies in transforming this normative commitment into stable funding, technical capacity and territorial implementation. Previous work in Mozambique has also shown that the realisation of the right to adequate food depends on normative, technical, cultural and socioeconomic dimensions, including attention to local knowledge and structural determinants such as poverty, inequality, land access, climate change and institutional fragility [43].

Another shared feature is the use of national strategies and plans to operationalise policy goals. Brazil has used PNSAN, PLANSAN and related programmes to articulate targets, resources and monitoring systems, while Mozambique’s PESAN defines implementation strategies, monitoring mechanisms and responsibilities across territorial levels [10, 34, 44]. However, the comparison suggests a difference in institutional maturity: Brazil has a more consolidated legal, participatory and federative architecture, whereas Mozambique’s recent framework places stronger emphasis on coordination, resource mobilisation and the strengthening of subnational implementation capacity.

Monitoring and data use also emerged as common policy concerns. Brazil has developed instruments such as EBIA, which made it possible to measure household food insecurity directly and to inform public management, research and social monitoring [15, 19, 20]. Mozambique relies on IPC assessments and SETSAN-led evaluations to monitor acute food insecurity and nutrition conditions [11, 12, 45]. The incorporation of rapid and context-sensitive household food insecurity measures could strengthen territorial surveillance in Mozambique, particularly if integrated into district and provincial planning systems.

Both countries also face common implementation challenges related to local vulnerabilities, inequality, limited resources and uneven institutional capacity. In Brazil, inequalities across regions and municipalities affect the uniformity of policy implementation. In Mozambique, food insecurity is deeply affected by climatic variability, seasonal shocks, post-harvest losses, nutrition deficiencies, rural infrastructure constraints and limited access to markets and services [10–12, 45]. These shared challenges suggest that FNS policy must be designed not only as a national framework but also as a territorial strategy capable of adapting to local risks and capacities.

Table 1 summarises the common dimensions identified in the policy frameworks of Brazil and Mozambique.

Table 1
Common dimensions of food security public policies in Brazil and Mozambique.

Dimension/component	Brazil	Mozambique
Legal and normative foundation	Human right to food recognised in the Constitution; LOSAN established SISAN; Decree No. 7.272/2010 regulated PNSAN.	PESAN 2024–2030 approved by Resolution No. 60/2024; linked to CONSAN and SETSAN as coordination structures.
Coordination system or institutional body	SISAN, with CAISAN, CONSEA and local councils as mechanisms of intersectoral and participatory governance.	SETSAN as a technical secretariat and CONSAN as a political coordination body; emphasis on decentralisation and district-level focal points.
Strategic planning instrument	PNSAN and PLANSAN, with goals, monitoring and federative agreements among states and municipalities.	PESAN implementation strategy, with provincial and district planning integrated into local development plans.
Pillars and lines of action	Access, family farming, food acquisition programmes, school feeding, social protection, food and nutrition education, monitoring and evaluation.	Diversified and sustainable production, access, social protection, intersectoral governance, information and monitoring, institutional strengthening.
Resources and mobilisation	Federal budget allocations and specific funds for FNS programmes, with budgetary agreements across federative levels.	Need for adequate financing, mobilisation of domestic resources and partnerships, and stronger institutionalisation to guarantee resources.
Monitoring and evaluation	Monitoring systems based on FNS indicators, periodic assessments, transparency and social control.	Monitoring and evaluation defined at performance, intermediate outcome and impact levels, with mid-term and final evaluations.
Decentralisation and local implementation	States and municipalities join SISAN through local councils, municipal FNS plans and implementation responsibilities.	Emphasis on local strengthening through district focal points and integration of FNS into district and provincial plans.
Common challenges	Regional inequalities, limited resources in smaller municipalities, complex intersectoral coordination and variation in local institutional capacity.	Local institutional fragility, coordination across levels, resource scarcity, need for local training and pronounced climatic and regional vulnerabilities.

Source: Authors' elaboration.

Conclusions

This comparative study shows that, despite structural and contextual differences, Brazil and Mozambique both frame food and nutrition security as a multisectoral and interinstitutional policy field. Brazil's SISAN, CAISAN, CONSEA and PLANSAN represent a more consolidated institutional model linking health, agriculture, social protection, education and participatory governance. Mozambique's PESAN 2024–2030 reinforces a similar multisectoral orientation, with strong emphasis on coordination, resource mobilisation and implementation across national, provincial and district levels.

The success of these policies depends not only on formal legal instruments or councils, but also on operational capacity, resource flows, monitoring systems, accountability and continuous adjustment to local realities. In Mozambique, the post-independence agrarian trajectory reveals that rural and agricultural transformation cannot depend exclusively on centralised planning or market mechanisms. A sustainable national agrarian model should strengthen family farming, secure land access, promote diversified local production and combine international integration with the protection of national food security priorities.

For both countries, strategic planning must combine national goals with local adaptation. Integrated information systems are needed to bring together indicators on agricultural production, post-harvest losses, household food insecurity, malnutrition, child health and social protection. Periodic evaluations should guide policy adjustments, and data should be made accessible to civil society, researchers and communities to strengthen transparency and co-responsibility.

Finally, food and nutrition security policies should prioritise vulnerable groups and high-risk territories, including rural, peripheral and historically marginalised communities. Social protection networks, links with health and nutrition services, support for family farming and adaptation to climate shocks are essential to improve policy effectiveness. The comparison between Brazil and Mozambique therefore offers a useful policy lesson: food and nutrition security requires rights-based frameworks, stable funding, territorial implementation and continuous monitoring capable of linking national commitments to local needs.

Abbreviations

CAISAN
Intersectoral Chamber for Food and Nutrition Security
CONSEA
National Council for Food and Nutrition Security
CONSAN
National Council for Food and Nutrition Security
EBIA
Brazilian Food Insecurity Scale
ESAN
Food and Nutrition Security Strategy

FNS
Food and nutrition security
IPC
Integrated Food Security Phase Classification
IRAMUTEQ
Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires
LOSAN
Organic Law on Food and Nutrition Security
PAA
Food Acquisition Programme
PASAN
Food and Nutrition Security Action Plan
PESAN
Food and Nutrition Security Policy and Strategy
PLANSAN
National Food and Nutrition Security Plan
PNAE
National School Feeding Programme
PNAN
National Food and Nutrition Policy
PNSAN
National Food and Nutrition Security Policy
SAN
Segurança Alimentar e Nutricional
SETSAN
Technical Secretariat for Food and Nutrition Security
SISAN
National Food and Nutrition Security System

Declarations

Ethics approval and consent to participate

Not applicable. This study was based exclusively on publicly available official policy documents and normative texts from Brazil and Mozambique. No human participants, personal data, interviews, medical records, biological samples or identifiable information were involved. Therefore, ethics committee approval and informed consent were not required.

Consent for publication

Not applicable. The manuscript does not contain any individual person's data, images, videos or case details.

Competing interests

The authors declare that they have no competing interests.

Authors' information

Not applicable.

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Author Contribution

WAFN contributed to the study conception, documentary organisation, corpus preparation, lexical analysis, interpretation of findings and drafting of the manuscript. GM contributed to conceptual refinement, interpretation of findings, international contextualisation and critical revision of the manuscript. MTP contributed to methodological discussion, interpretation of the Brazilian policy framework and critical revision of the manuscript. JOBA contributed to contextual interpretation of the Brazilian policy framework and critical revision of the manuscript. JCF contributed to contextual interpretation of the

Mozambican policy framework and critical revision of the manuscript. JIMG contributed to contextual interpretation of the Mozambican food and nutrition security policy framework and critical revision of the manuscript. JSN contributed to conceptual discussion, supervision, interpretation of findings and critical revision of the manuscript. All authors read and approved the final manuscript.

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Availability of data and materials

The documents analysed in this study are publicly available from official public sources cited in the reference list, including Brazilian and Mozambican normative documents on food and nutrition security. The processed textual corpus and analytical files may be made available by the corresponding author on reasonable request.

References

1. Saccone D, Vallino E. Global food security in a turbulent world: reviewing the impacts of the pandemic, the war and climate change. Agric Econ. 2025;13(1):47. 10.1186/s40100-025-00388-0.
2. Food Security Information Network, Global Network Against Food Crises. Global Report on Food Crises 2025. Rome: FSIN/GNAFC. 2025. Available from: https://www.fsinplatform.org/global-report-food-crises-2025
3. Manogna RL, Kulkarni N. Does the financialization of agricultural commodities impact food security? An empirical investigation. Borsa Istanbul Rev. 2024;24(2):280–91. 10.1016/j.bir.2024.01.001.
4. Clapp J, Moseley WG, Termine P, Burlingame B. Multi-scalar policy uptake of the six-dimensional food security framework. Food Policy. 2025;137:102936. 10.1016/j.foodpol.2025.102936.
5. Mirzabaev A, Bezner Kerr R, Hasegawa T, Pradhan P, Wreford A, von der Tirado MC, et al. Severe climate change risks to food security and nutrition. Clim Risk Manage. 2023;39:100473. 10.1016/j.crm.2022.100473.
6. Wahbeh S, Anastasiadis F, Sundarakani B, Manikas I. Exploration of food security challenges towards more sustainable food production: a systematic literature review of the major drivers and policies. Foods. 2022;11(23):3804. 10.3390/foods11233804.
7. FAO, IFAD, UNICEF, WFP, WHO., The State of Food Security and Nutrition in the World 2025. Rome: FAO; 2025. Available from: https://openknowledge.fao.org/handle/20.500.14283/cd6008en
8. UNICEF, WFP. PAHO. Latin America and the Caribbean: Regional Overview of Food Security and Nutrition 2023. Santiago: FAO; 2023. 10.4060/cc8514en.
9. Mumah E, Hong Y, Chen Y. Exploring the reality of global food insecurity and policy gaps. Humanit Soc Sci Commun. 2025;12:1241. 10.1057/s41599-025-05315-8.
10. Mozambique. Política e Estratégia de Segurança Alimentar e Nutricional (PESAN 2024–2030), Resolution No. 60/2024 of 15 October 2024. Maputo: Boletim da República; 2024. Available from: https://faolex.fao.org/docs/pdf/moz230495.pdf
11. Integrated Food Security Phase Classification. Mozambique: IPC Acute Food Insecurity Snapshot. IPC Analysis Partners. 2025. Available from: https://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/docs/COMBINED_IPC_Mozambique_Acute_Food_Insecurity_Oct2024_Mar2025_Snapshot_Englis
12. Integrated Food Security Phase Classification. Mozambique, Cabo Delgado: situação da desnutrição aguda na província de Cabo Delgado. IPC Analysis Partners. 2022. Available from: https://www.fsinplatform.org/sites/default/files/resources/files/IPC_Mozambique_Acute_Malnutrition_2021Feb2022Jan_Report_Portuguese.pdf
13. Instituto Brasileiro de Geografia e Estatística. Censo Demográfico 2022: Panorama. Rio de Janeiro: IBGE; 2022. Available from: https://censo2022.ibge.gov.br/panorama/
14. Vasconcelos FAG. Combate à fome no Brasil: uma análise histórica de Vargas a Lula. Rev Nutr. 2005;18(4):439–57. 10.1590/S1415-52732005000400001.
15. Segall-Corrêa AM, Marin-Leon L. A segurança alimentar no Brasil: proposição e usos da escala brasileira de medida da insegurança alimentar (EBIA) de 2003 a 2009. Segur Aliment Nutr. 2009;16(2):1–19. 10.20396/san.v16i2.8634782.
16. Athila AR, Leite MS. A medida da fome: as escalas psicométricas de insegurança alimentar e os povos indígenas no Brasil. Cad Saude Publica. 2020;36(10):e00208019. 10.1590/0102-311X00208019.
17. Interlenghi GS, Reichenheim ME, Segall-Corrêa AM, Pérez-Escamilla R, Moraes CL, Salles-Costa R. Suitability of the eight-item version of the Brazilian Household Food Insecurity Measurement Scale to identify risk groups: evidence from a nationwide representative sample. Public Health Nutr. 2019;22(5):776–84. 10.1017/S1368980018003592.
18. Lopes AF, Carvalho MJLN, Aquino NB, Soares MLA, Carvalho SCDC, Barros FB. Escala brasileira de insegurança alimentar: proposta adaptada para povos e comunidades tradicionais. Demetra. 2022;17:e66149. 10.12957/demetra.2022.66149.
19. Reichenheim ME, Bastos JL. What, what for and how? Developing measurement instruments in epidemiology. Rev Saude Publica. 2021;55:40. 10.11606/s1518-8787.2021055002813.

20. Segall-Corrêa AM, Marin-Leon L, Melgar-Quinonez H, Pérez-Escamilla R. Refinement of the Brazilian Household Food Insecurity Measurement Scale: recommendation for a 14-item EBIA. Rev Nutr. 2014;27(2):241–51. 10.1590/1415-52732014000200010.
21. Martins MC, Gabriel CG, Machado ML, Machado PMO, Soar C, Longo GZ. Brazilian National Food and Nutritional Security System: what are the similarities in the decentralization process? Cad Saude Publica. 2023;39(3):e00131022. 10.1590/0102-311XEN131022.
22. Sposati A. Cadastro Único: identidade, teste de meios, direito de cidadania. Serv Soc Soc. 2021;141183–203. 10.1590/0101-6628.245.
23. Silva VC, Barim EM, Murta-Nascimento C. Contributions of the Food Acquisition Program to strengthening family farming and food and nutrition security: integrative review. Physis. 2025;35(1):e350106. 10.1590/S0103-73312025350106pt.
24. Alves KPS, Jaime PC, The National Food and Nutrition Policy and its dialogue with the National Food and Nutrition Security Policy. Cien Saude Colet. 2014;19(11):4331–40. 10.1590/1413-812320141911.08072014.
25. Ricci JMS, Sato PDM, Lourenco BH. Food and nutrition surveillance: exploring facilitators and barriers to electronic registration in Brazil. Inf Health. 2025;2(2):92–8. 10.1016/j.infoh.2025.04.001.
26. Pedrotti F, Oliveira e Silva D. Segurança alimentar e nutricional no Brasil: ontem, hoje e o amanhã. Rev Aliment Cult Am. 2023;3(2):176–188. Available from: https://raca.fiocruz.br/index.php/raca/article/view/135
27. Brazil. Law No. 11.346 of 15 September 2006. Creates the National Food and Nutrition Security System (SISAN). Brasilia: Presidency of the Republic; 2006. Available from: https://www.planalto.gov.br/ccivil_03/_Ato2004-2006/2006/Lei/L11346.htm
28. Silva JG, Del Grossi ME, Franca CG, editors. The Fome Zero (Zero Hunger) Program: the Brazilian experience. Brasilia: Ministry of Agrarian Development; 2012. Available from: https://www.fao.org/4/i3023e/i3023e.pdf
29. Fagundes A, Ribeiro RCL, Brito ERB, Recine E, Rocha C. Public infrastructure for food and nutrition security in Brazil: fulfilling the constitutional commitment to the human right to adequate food. Food Secur. 2022;14(4):897–905. 10.1007/s12571-022-01272-1.
30. Fernandes B, Guerra LDS. Food and nutrition insecurity in Brazil: contributions from the political economy of health. J Manag Prim Health Care. 2023;15:e003. Available from: https://jmphc.com.br/jmphc/article/view/1333
31. Meza J. Brazil has left the Hunger Map again. United Nations Brazil; 2025. Available from: https://brasil.un.org/pt-br/299851-artigo-brasil-voltou-sair-do-mapa-da-fome
32. Brazil, Ministry of Development and Social Assistance., Family and Fight against Hunger. Brazil off the Hunger Map: updated balance. Brasilia: MDS; 2025. Available from: https://www.gov.br/mds/pt-br/acoes-e-programas/brasil-sem-fome/balanco/balanco_atualizado_mapa_da_fome_en.pdf
33. Konig D. Theory of Finite and Infinite Graphs. Boston: Birkhauser; 1990. 10.1007/978-1-4684-8971-2.
34. Brazil D. No. 7.272 of 25 August 2010. Regulates Law No. 11.346 and institutes the National Food and Nutrition Security Policy. Brasilia: Presidency of the Republic; 2010. Available from: https://www.planalto.gov.br/ccivil_03/_ato2007-2010/2010/decreto/d7272.htm
35. Camargo BV, Justo AM. IRAMUTEQ: a free software for textual data analysis. Temas Psicol. 2013;21(2):513–8. 10.9788/TP2013.2-16.
36. R Core Team. R: A language and environment for statistical computing. Vienna: R Foundation for Statistical Computing. 2025. Available from: https://www.r-project.org/
37. Paradis E, Schliep K. ape 5.0: an environment for modern phylogenetics and evolutionary analyses in R. Bioinformatics. 2019;35(3):526–8. 10.1093/bioinformatics/bty633.
38. Smith MR. Information theoretic generalized Robinson-Foulds metrics for comparing phylogenetic trees. Bioinformatics. 2020;36(20):5007–13. 10.1093/bioinformatics/btaa614.
39. Yu G, Smith DK, Zhu H, Guan Y, Lam TT. ggtree: an R package for visualization and annotation of phylogenetic trees with covariates and associated data. Methods Ecol Evol. 2017;8(1):28–36. 10.1111/2041-210X.12628.
40. Brazil, National Health Council. Resolution No. 510 of 7 April 2016. Brasilia: Ministry of Health; 2016. Available from: https://conselho.saude.gov.br/resolucoes/2016/Reso510.pdf
41. Chichava S. 'They can kill us but we won't go to the communal villages!' Peasants and the policy of 'socialisation of the countryside' in Zambezia. Kronos. 2013;39(1):112–130. Available from: https://www.scielo.org.za/scielo.php?pid=S0259-01902013000100005&script=sci_arttext
42. Burlandy L. A construção da política de segurança alimentar e nutricional no Brasil: estratégias e desafios para a promoção da intersetorialidade no âmbito federal de governo. Cien Saude Colet. 2009;14(3):851–60. 10.1590/S1413-81232009000300020.
43. Gove JIM, Giordani RCF, Jasper VHS, Estavela A, Bezerra I. Xilala is only treated with a good hand: a study on the treatment of malnutrition in Mozambique. Cad Saude Publica. 2021;37(7):e00212320. 10.1590/0102-311X00212320.
44. Brazil, Ministry of Health. National Food and Nutrition Policy. Brasilia: Ministry of Health; 2013. Available from: https://bvsms.saude.gov.br/bvs/publicacoes/politica_nacional_alimentacao_nutricao.pdf
45. Mozambique, National Council for Food and Nutrition Security. Relatorio da Avaliacao de Seguranca Alimentar e Nutricional Aguda. Maputo: SETSAN; 2021. Available from: https://www.agricultura.gov.mz/wp-content/uploads/2025/01/SETSAN_Relatorio-da-Avaliacao-de-Seguranca-Alimentar-e-Nutricional-Aguda-Novembro-2021.pdf

Figures

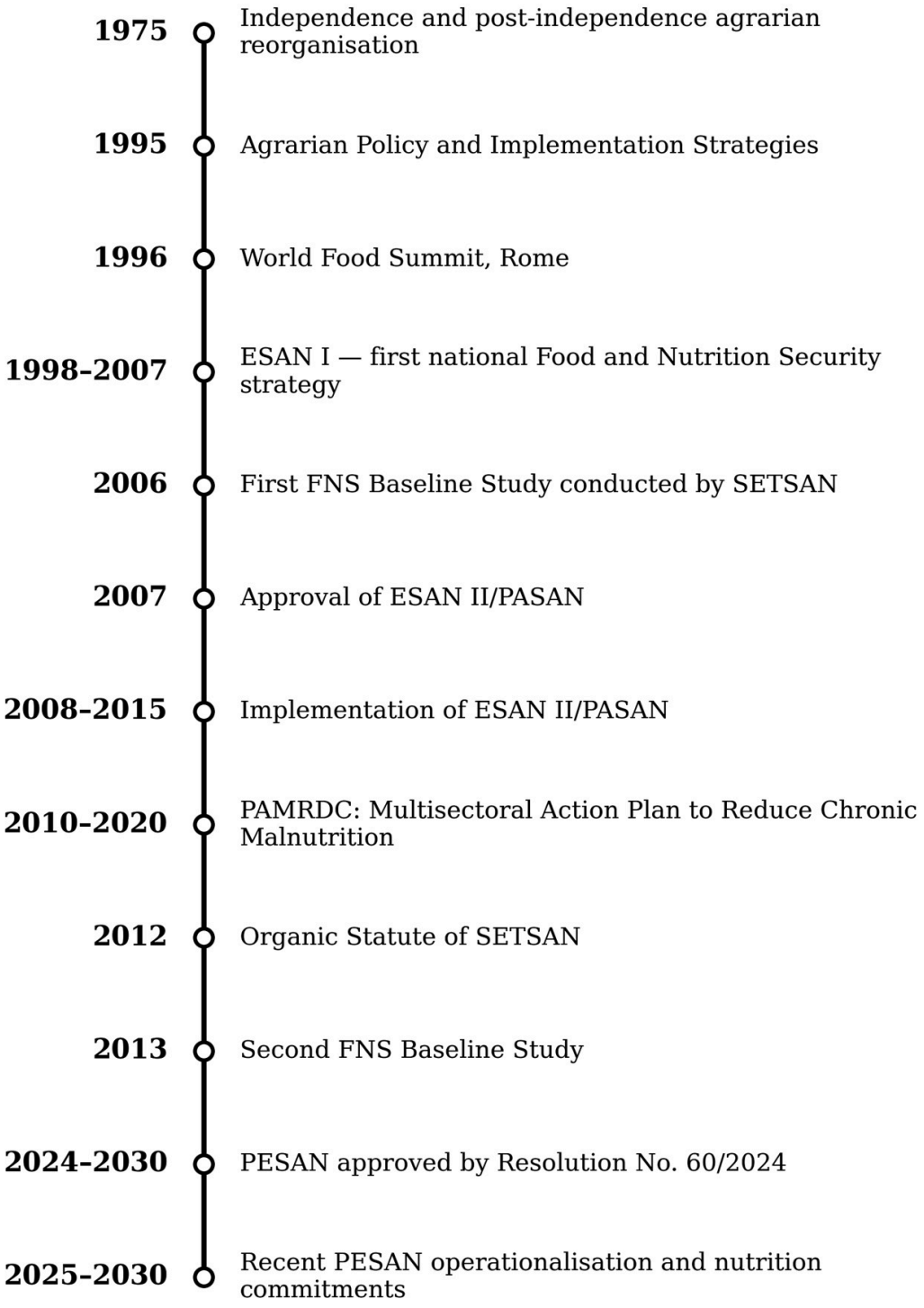


Figure 1

Timeline of Food and Nutrition Security policy in Mozambique.

Source: Authors' elaboration based on Mozambique's FNS policy documents, ESAN II/PASAN, SETSAN documents and PESAN 2024-2030.

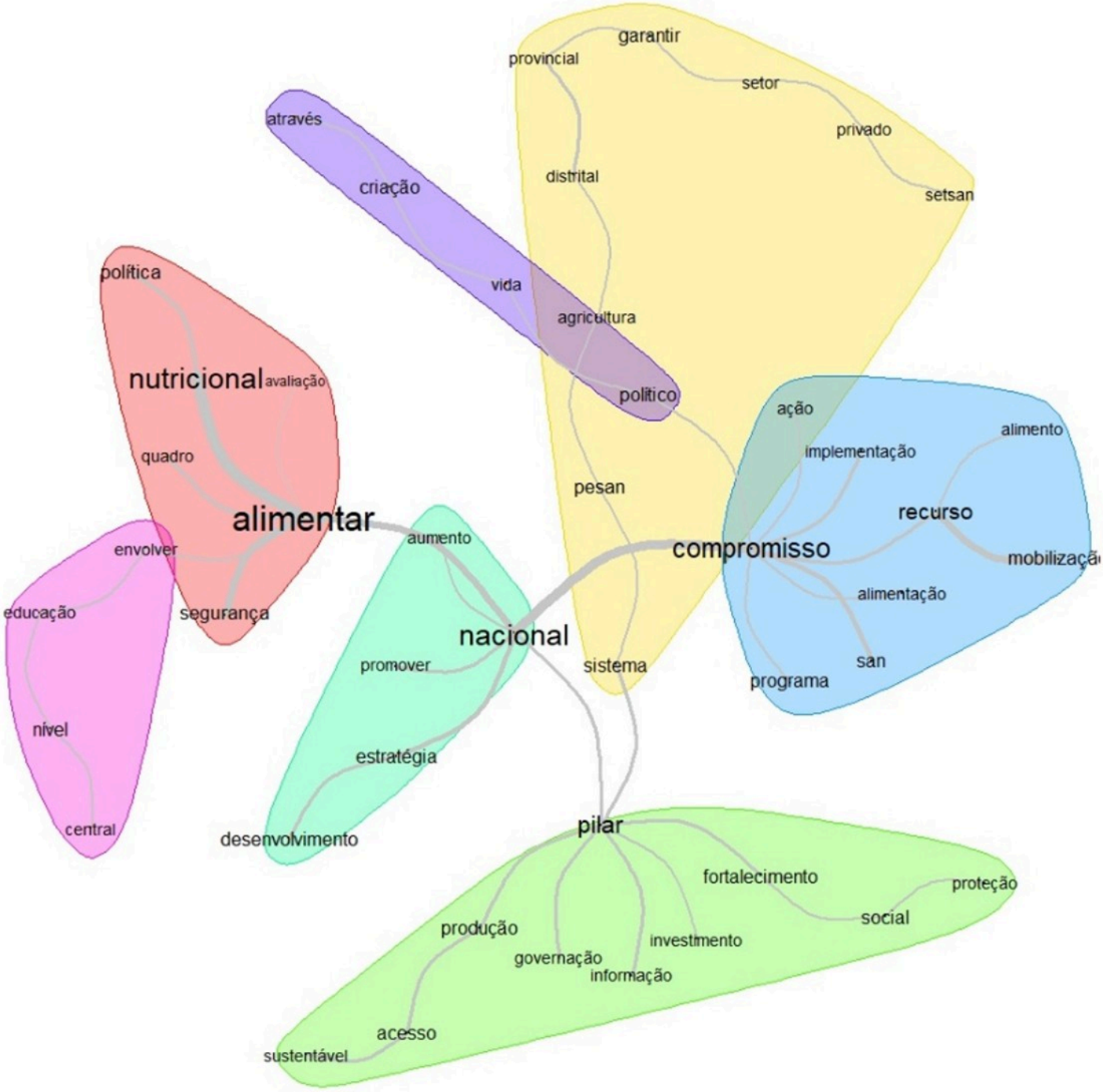


Figure 2

Similarity tree of the Food and Nutrition Security Policy and Strategy in Mozambique.

Source: Authors' elaboration using IRAMUTEQ.

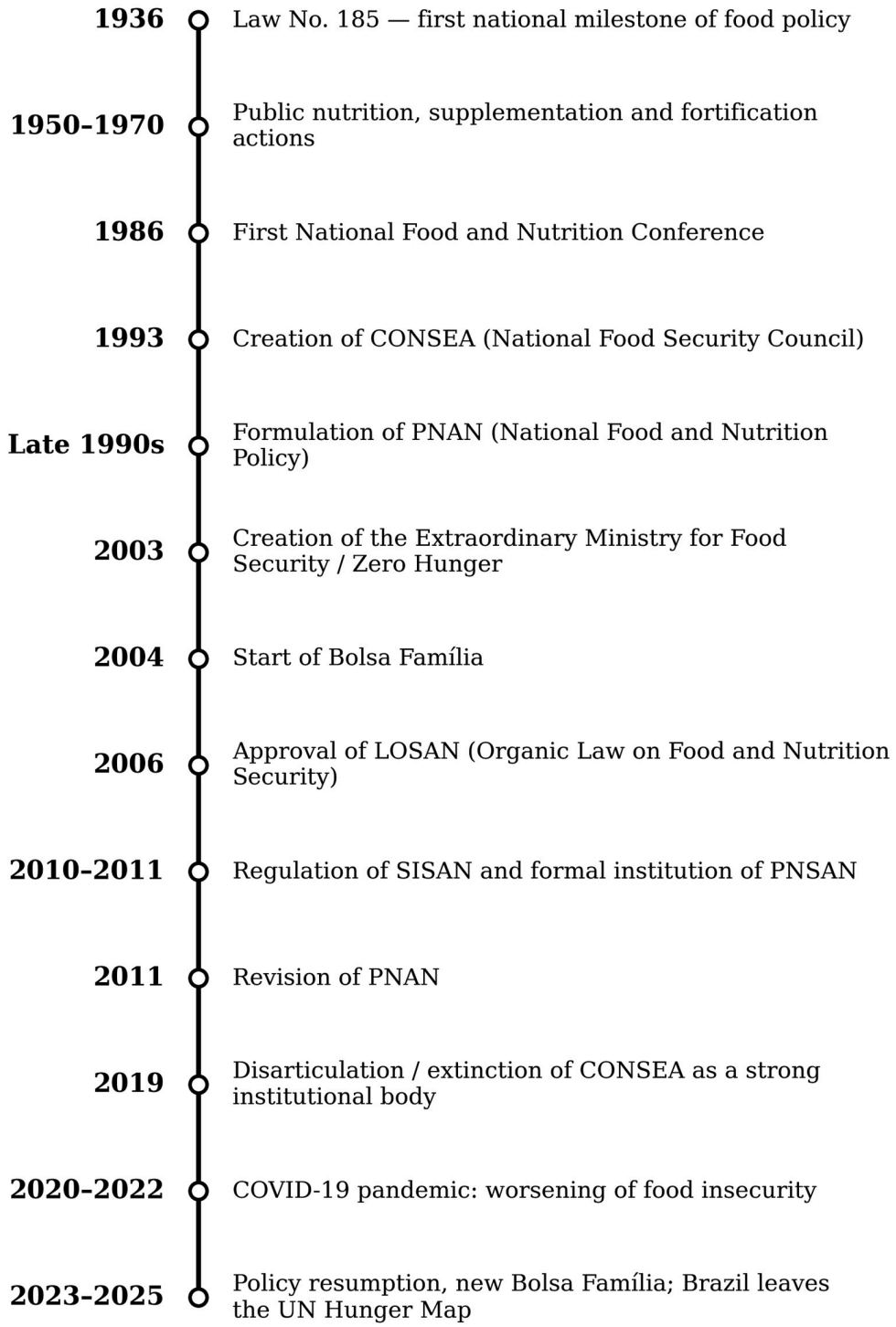


Figure 3

Timeline of Food and Nutrition Security policy in Brazil.

Source: Authors' elaboration based on Brazilian food and nutrition security policy documents and secondary literature.

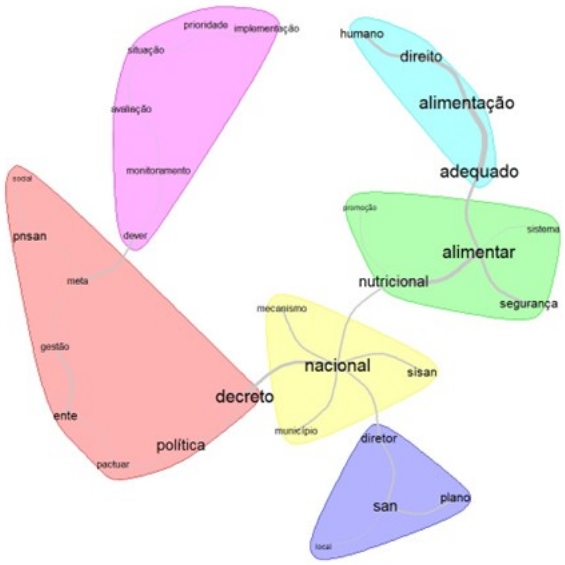


Figure 4

Similarity tree of the National Food Security Policy in Brazil.

Source: Authors' elaboration using IRAMUTEQ.