LUMEN ET VIRTUS
ISSN: 2177-2789

COMPARING FOOD AND NUTRITION POLICIES IN BRAZIL AND PORTUGAL USING THE NOURISHING FRAMEWORK: A POLICY REVIEW

COMPARANDO POLÍTICAS DE ALIMENTAÇÃO E NUTRIÇÃO NO BRASIL E EM PORTUGAL USANDO O MODELO NOURISHING: UMA REVISÃO DE POLÍTICAS

COMPARACIÓN DE LAS POLÍTICAS ALIMENTARIAS Y NUTRICIONALES EN BRASIL Y PORTUGAL UTILIZANDO EL MARCO NOURISHING: UNA REVISIÓN DE POLÍTICAS

https://doi.org/10.56238/levv16n52-038

Submission date: 08/15/2025 **Publication date:** 09/15/2025

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ABSTRACT

Background: In the face of rising obesity, food insecurity, and non-communicable diseases, comprehensive food and nutrition policies are essential. Brazil and Portugal - two nations with shared linguistic, cultural, and public health foundations - offer distinct but complementary strategies. This study compares their nutrition policies using the NOURISHING framework to identify lessons and gaps.

Methods: A narrative review was conducted using peer-reviewed articles and official documents published between 2010 and 2025, retrieved from PubMed, Scopus, Web of Science, and SciELO. MeSH terms and Boolean operators guided the search. Policies were analysed across the ten NOURISHING domains.

Results: Brazil leads in universal access and equity-based policies, with extensive programs such as the National School Feeding Program (PNAE) and the integration of nutrition in primary care. Portugal excels in structured regulatory frameworks, public awareness campaigns, and food industry reformulation strategies. Both countries face challenges in monitoring, retail regulation, and coordinated implementation.

Conclusion: Effective public nutrition policy demands action across all ten domains of the NOURISHING framework. Brazil and Portugal offer mutually reinforcing models: Brazil brings depth in social inclusion and access; Portugal offers clarity in governance and enforcement. Together, they provide a roadmap for coherent, impactful food policy.

Keywords: Nutrition Policy. Brazil. Portugal. Public Health. Government Programs. Comparative Study.

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RESUMO

Contexto: Diante do aumento da obesidade, da insegurança alimentar e das doenças crônicas não transmissíveis, políticas abrangentes de alimentação e nutrição são essenciais. Brasil e Portugal – duas nações com bases linguísticas, culturais e de saúde pública comuns – oferecem estratégias distintas, mas complementares. Este estudo compara suas políticas de nutrição usando a estrutura NOURISHING para identificar lições e lacunas.

Métodos: Uma revisão narrativa foi conduzida utilizando artigos revisados por pares e documentos oficiais publicados entre 2010 e 2025, recuperados do PubMed, Scopus, Web of Science e SciELO. Termos MeSH e operadores booleanos guiaram a busca. As políticas foram analisadas nos dez domínios NOURISHING.

Resultados: O Brasil lidera em políticas de acesso universal e equidade, com programas abrangentes como o Programa Nacional de Alimentação Escolar (PNAE) e a integração da nutrição na atenção primária. Portugal se destaca em marcos regulatórios estruturados, campanhas de conscientização pública e estratégias de reformulação da indústria alimentícia. Ambos os países enfrentam desafios em monitoramento, regulação do varejo e implementação coordenada.

Conclusão: Uma política pública de nutrição eficaz exige ações em todos os dez domínios do modelo NOURISHING. Brasil e Portugal oferecem modelos que se reforçam mutuamente: o Brasil traz profundidade em inclusão social e acesso; Portugal oferece clareza em governança e execução. Juntos, eles fornecem um roteiro para uma política alimentar coerente e impactante.

Palavras-chave: Política Nutricional. Brasil. Portugal. Saúde Pública. Programas Governamentais. Estudo Comparativo.

RESUMEN

Antecedentes: Ante el aumento de la obesidad, la inseguridad alimentaria y las enfermedades no transmisibles, es fundamental contar con políticas integrales de alimentación y nutrición. Brasil y Portugal, dos naciones con bases lingüísticas, culturales y de salud pública compartidas, ofrecen estrategias distintas pero complementarias. Este estudio compara sus políticas nutricionales utilizando el marco NOURISHING para identificar lecciones aprendidas y brechas.

Métodos: Se realizó una revisión narrativa utilizando artículos revisados por pares y documentos oficiales publicados entre 2010 y 2025, recuperados de PubMed, Scopus, Web of Science y SciELO. La búsqueda se orientó a términos MeSH y operadores booleanos. Se analizaron las políticas en los diez dominios de NOURISHING.

Resultados: Brasil lidera el acceso universal y las políticas basadas en la equidad, con amplios programas como el Programa Nacional de Alimentación Escolar (PNAE) y la integración de la nutrición en la atención primaria. Portugal destaca por sus marcos regulatorios estructurados, campañas de concienciación pública y estrategias de reformulación de la industria alimentaria. Ambos países enfrentan desafíos en materia de monitoreo, regulación del comercio minorista e implementación coordinada.

Conclusión: Una política pública de nutrición eficaz exige acciones en los diez ámbitos del marco NOURISHING. Brasil y Portugal ofrecen modelos que se refuerzan mutuamente: Brasil aporta profundidad en la inclusión social y el acceso; Portugal, claridad en la gobernanza y la aplicación de la ley. Juntos, proporcionan una hoja de ruta para una política alimentaria coherente e impactante.

Palabras clave: Política Nutricional. Brasil. Portugal. Salud Pública. Programas Gubernamentales. Estudio Comparativo.

1 INTRODUCTION

The global increase in non-communicable diseases (NCDs), such as obesity, type 2 diabetes and cardiovascular diseases, has coincided with the ongoing issue of food insecurity (Min et al., 2018). This paradoxical situation, known as the 'double burden of malnutrition', reflects the complex interplay between undernutrition, being overweight, and chronic diet-related diseases, which often affect the same individuals or populations (Min et al., 2018). This dual burden is strongly associated with social vulnerabilities, urbanisation and environments that encourage unhealthy eating habits (Conde & Monteiro, 2014), emphasising the need for comprehensive and effective public food and nutrition policies that address the health needs of diverse populations while reducing health inequalities (Agurs-Collins et al., 2024).

In Brazil, for example, 20.3% of adults are obese (Estivaleti et al., 2022), while 29% of the Brazilian households facing moderate to severe food insecurity (VIGISAN, 2022). These figures are particularly alarming among low-income populations and in regions with limited access to nutritious food. Portugal faces a similar situation, with a prevalence of obesity of 22% (Oliveira et al., 2018), and an estimated 19.3% of the population experiencing food insecurity (Gregório et al., 2018), particularly among the elderly and single-parent families (Álvares & F Amaral, 2014). While Portugal's food insecurity prevalence is lower than Brazil's, both countries are grappling with nutrition-related health issues that require coordinated, evidence-based policy responses.

In this context, food and nutrition policies are crucial for addressing the social and environmental factors that contribute to unhealthy diets. Effective policies can transform the food environment, regulate the food system and encourage behavioural change at a population level. The NOURISHING framework, developed by the World Cancer Research Fund International, is a comprehensive policy monitoring tool that can be used to guide and evaluate such policies (Vlad et al., 2023). It encompasses ten policy areas, which are categorised under three overarching domains: improving the food environment, the food system, and behaviour change communication. The NOURISHING framework enables governments to benchmark their national strategies against aspirational standards (Vlad et al., 2023). This helps them to identify policy gaps, share good practices, and stimulate political accountability and innovation. Rather than merely describing the current situation, it emphasises what should be in place for effective nutrition governance (Vlad et al., 2023).

The choice to compare Brazil and Portugal through this framework is both timely and meaningful. These “brother” countries are linked by historical, linguistic, and cultural ties, and they have bilateral agreements in the field of public health. Despite differing in terms of their

levels of economic development and institutional capacities, both countries share foundational principles in their health systems, such as universality, equity, and integrality (Saúde, 1988, 2017), and are globally recognised for the quality of their public health services.

Moreover, nutrition has gained prominence in national agendas in recent years, in areas such as research, education, policy and intersectoral strategies. Sound nutrition policies are vital for promoting health and well-being, reducing healthcare costs, improving population productivity and strengthening national wealth through long-term human development.

This review aims to expand existing knowledge by providing a comparative analysis of food and nutrition policies in Brazil and Portugal using the NOURISHING framework. It seeks to understand how each country addresses the double burden of malnutrition, identify strengths and gaps in policy actions, and explore what each country can learn from the other regarding health promotion through nutrition policy, government leadership and resource allocation.

2 METHODS

This study followed a qualitative comparative approach, using the NOURISHING framework (Vlad et al., 2023) to analyse and compare food and nutrition policies in Brazil and Portugal. Between July and August 2025, we conducted a structured literature search across four major electronic databases: PubMed, Scopus, Web of Science, and SciELO. The search targeted peer-reviewed literature published between 1 January 2010 and 1 July 2025. Combinations of Medical Subject Headings (MeSH) and Boolean operators ('AND', 'OR') were used to identify relevant articles. The MeSH terms included 'Nutrition Policy', 'Public Health', 'Health Promotion', 'Government Programs', 'Brazil' and 'Portugal'. Example search strings included: ('Nutrition policy' OR 'Food policy') AND ('Brazil' OR 'Portugal') AND 'Public Health', and ('Portugal' OR 'Brazil') AND 'Health Promotion' AND 'Government Programs'. Filters were applied to include only full-text articles written in English or Portuguese and published within the specified timeframe.

Articles were eligible for inclusion if they were original research or review articles addressing food and nutrition policies or programmes at the national or subnational level in Brazil or Portugal. Each study had to address at least one of the ten policy areas within the NOURISHING framework. Articles focusing solely on clinical nutrition or individual-level dietary interventions unrelated to policy, as well as editorials, commentaries, conference abstracts and other non-peer-reviewed content, were excluded.

The selection process was conducted in two stages. First, the titles and abstracts of the studies were screened for relevance based on the eligibility criteria. Then, the full texts of the studies that were potentially relevant were retrieved and reviewed.

The NOURISHING components, related to the food environment (N, O, U, R, I, S), the food system (H) and behaviour change communication (I, N, G) - were used to structure the comparison between Brazil and Portugal. We performed a narrative synthesis to identify patterns, similarities and differences in policy strategies and implementation across the two countries.

3 RESULTS AND DISCUSSION

A comprehensive literature search across multiple databases yielded a set of relevant articles after screening and duplicate removal. The majority of these articles focused on Brazil, highlighting the country's well-established national nutrition agenda and the prominence of the Unified Health System (SUS), as well as the increased academic focus on policy evaluation. The selected studies were analysed using the NOURISHING framework to compare national nutrition policies in Brazil and Portugal across key policy areas within the domains of the food environment, the food system, and behaviour change communication.

3.1 NUTRITION LABEL STANDARDS AND REGULATION ON THE USE OF CLAIMS AND IMPLIED CLAIMS ON FOODS (N)

How important and effective is the implementation of measures in the NOURISHING domain?

The regulation of food labelling and health and nutrition claims is a key strategy for improving dietary choices (Shangguan et al., 2019), particularly in contexts where processed foods dominate and health literacy is low. Front-of-pack labelling and restrictions on misleading claims empower consumers to make healthier choices and reduce their consumption of energy-dense, nutrient-poor foods. It, also, promotes food reformulation (Shangguan et al., 2019). These policies are also highly cost-effective, incurring low implementation costs relative to the potential reductions in diet-related non-communicable diseases (Organization, 2024).

What measures have been implemented in Brazil?

Brazil has introduced a number of regulatory measures relating to food labelling.

- Back-of-pack nutrients: Through the resolution RDC nº 259/2002, mandatory nutrition information, including energy value, macronutrients and sodium content, has been required on the back of packaged foods.
- Front-of-pack labelling (FOPL): The resolution RDC nº. 429/2020 has mandated the use of front-of-pack warning labels featuring black octagonal icons for products high in added sugars, sodium, or saturated fats.
- Warnings: These interpretive warning labels are triggered by defined nutrient thresholds and aim to encourage healthier choices.
- Rules on nutrient claims: Products bearing any front-of-pack warning label are prohibited from displaying nutrient content claims such as 'low fat' or 'high fibre',
- Rules on health claims: Similarly, these products are barred from using health claims, including references to disease risk reduction or functional benefits.

These policies reduce the impact of misleading food marketing and promote informed consumer choices reducing the perception of healthiness (Senda et al., 2024). These policies are in line with international best practice, such as the Chilean model, and initial results suggest it is improving consumer understanding, reducing purchase intent and encouraging product reformulation (Taillie et al., 2021). Therefore, it could lead to significant reductions in the consumption of unhealthy foods and associated healthcare costs, particularly if it is paired with public awareness campaigns and other regulatory actions (Jones et al., 2019).

What measures have been implemented in Portugal?

Portugal follows EU Regulation nº 1169/2011, which stipulates that:

- Back-of-pack nutrition information: Mandatory nutrition declarations on packaged foods must include information on energy, fat, saturated fat, carbohydrates, sugars, protein and salt.
- Front-of-pack labelling (FOPL): Voluntary. Some companies use the Nutri-Score system, which is a colour-coded, graded scheme designed to encourage healthier choices and reformulation (Andreeva et al., 2021). However, its non-mandatory status limits its potential public health impact and widespread use.
- Warnings: No warning labels have been implemented nationally for foods high in critical nutrients.
- Rules on nutrient claims: These are permitted under EU law if products meet specific criteria, even for ultra-processed foods.
- Rules on health claims: Allowed under EU regulation, including on unhealthy products, which can potentially mislead consumers (Fransvea et al., 2014).

Portugal's current labelling policies are moderately effective, but their impact could be strengthened by adopting a mandatory FOPL, imposing tighter regulation on claims and using nutrient profiling models to restrict claims on unhealthy foods.

Which country performs best in this NOURISHING domain?

Based on the NOURISHING benchmark indicators, Brazil demonstrates stronger regulatory alignment and public health orientation in this area. The implementation of mandatory nutrient-specific warning labels and the prohibition of claims on unhealthy products positions Brazil as a leader in Latin America and a model of good practice internationally. While Portugal is aligned with EU standards and moving towards greater transparency, it is limited by the voluntary nature of the use of FOPL and the permissiveness of EU-wide claim regulations.

What can countries learn from each other?

Although Brazil and Portugal are at different points on the labelling policy spectrum, each country can offer valuable insights that the other has yet to embrace. Portugal could take inspiration from Brazil's bold decision to introduce clear, nutrient-specific warnings on the front of food packaging, prioritising transparency and public interest over the comfort of the food industry. Brazil's system, backed by regulatory enforcement, demonstrates how robust labelling can challenge misleading health narratives and transform food environments.

Conversely, Brazil could benefit from Portugal's integration into EU-level mechanisms, where robust, harmonised research structures support evidence-based policymaking and systematic policy monitoring - areas that are still underdeveloped in Brazil.

Ultimately, collaboration offers the greatest opportunity: sharing real-world implementation data, aligning evaluation metrics and engaging in sustained cross-national policy dialogue. Both countries would also be wise to link labelling to advertising regulation, recognising that labels alone cannot compete with persuasive marketing. Without coherence across food policy instruments, consumers are left to navigate a landscape of conflicting messages.

3.2 OFFER HEALTHY FOOD AND SET STANDARDS IN PUBLIC INSTITUTIONS AND OTHER SPECIFIC SETTINGS (O)

How important and effective is the implementation of measures in the NOURISHING domain?

Creating healthier food environments in public institutions, such as schools, hospitals, universities, prisons and workplaces, is an effective strategy for improving population nutrition, particularly among vulnerable groups (Gorski & Roberto, 2015). These

environments offer a unique opportunity to influence food choices, promote health equity and prevent non-communicable diseases (NCDs) from an early age (Pineda et al., 2022). Setting nutrition standards and ensuring the availability of healthy meals in public settings is also an effective way to influence food supply chains, support local agriculture (Fanzo et al., 2022) and encourage collaboration between different sectors. Evidence suggests that such interventions are cost-effective, particularly when implemented universally and supported by public procurement policies (Mozaffarian et al., 2018).

What measures have been implemented in Brazil?

Food and drink available in schools, including restrictions on unhealthy options

Brazil's National School Feeding Programme (PNAE) ensures that all students in public primary and secondary schools have universal access to free school meals. These meals must comply with national nutritional guidelines, explicitly prohibiting the inclusion of ultra-processed foods and prioritizing fresh, minimally processed ingredients (Educação). The PNAE is widely regarded as one of the most comprehensive and cost-effective school feeding programmes in the world. It simultaneously supports health, educational outcomes, and local economies (E. Sidaner et al., 2013).

Measures concerning the provision of sugary drinks in schools

The PNAE and related school regulations prohibit the sale and distribution of sugary drinks on school premises, thereby reinforcing efforts to limit children's exposure to products that are associated with obesity and chronic diseases.

Initiatives concerning fruit and vegetables in schools

At least 30% of school food purchases must come from local family farms, with a preference for organic, fresh produce such as fruit and vegetables. This improves dietary quality and supports small-scale agriculture and regional food systems (Educação)..

Food and drink available in the vicinity of schools

While national regulation of the food environment around schools is still limited, some local authorities have introduced zoning laws or restrictions on the sale of unhealthy food near schools. However, broader and more consistent implementation remains a challenge.

Unhealthy food outside the education system

Brazil promotes healthy eating in various public settings through institutional food services to enhance food and nutritional security (Soares et al., 2021). These include university restaurants (Mussio, 2015), popular restaurants (PADRÃO & AGUIAR, 2018), public hospitals and prisons (Soares et al., 2021), all of which provide nutritionally balanced meals that align with national food guidelines. These services are often subsidised or free,

targeting low-income and vulnerable populations as part of the country's wider food and nutrition security agenda.

What measures have been implemented in Portugal?

Restrictions on unhealthy food and drink available in schools

Portugal establishes national nutrition standards for school meals via official guidelines, such as the circular issued by the Directorate-General for Education in 2018, which sets out nutritional criteria for balanced menus. However, school meals are not universally free, students can access them at subsidised prices. In 2021, Dispatch nº 8127 prohibited the sale of soft drinks and energy-dense snacks in school cafeterias and vending machines. The state also provides free morning and afternoon snacks for children from socioeconomically vulnerable backgrounds.

Measures concerning the provision of sugary drinks in schools

The 2021 regulation explicitly bans sugary drinks from school food outlets, aiming to reduce children's exposure to products high in added sugars.

Initiatives concerning fruit and vegetables in schools

Portugal participates in the EU School Fruit, Vegetables and Milk Scheme (Regulament (UE) 2016/791 implemented nationally through Portaria nº 113/2018), which provides children with free portions of fresh produce and milk, thereby promoting healthy eating habits from an early age.

Food and drink available in the vicinity of schools

Currently, there are no national regulations restricting the food environment around schools, although some local municipalities have introduced their own initiatives. This remains a policy gap.

Unhealthy food in places outside the education system

Portugal has taken steps to improve food offerings in public institutions. Dispatches 7516-A/2016 and 11391/2017 regulate the availability of food and beverages in public hospitals, including in vending machines and cafeterias. These regulations align these environments with national dietary guidelines.

Despite these efforts, however, monitoring and enforcement remain weak. Limited financial and human resources constrain compliance assessment and impact evaluation (Rodrigues et al., 2025), resulting in uncertain real-world effectiveness and uneven implementation across institutions.

Which country performs best in this NOURISHING domain?

While Portugal brings structure, Brazil brings scale, equity and purpose. Its public food services extend beyond nutritional provision, forming part of a wider social protection network

that provides free or subsidised meals in schools, universities, hospitals and community settings. Guided by nutrition standards and grounded in local food procurement, these services reinforce both public health and food sovereignty.

Although Portugal has made significant progress with its clear standards for schools and hospitals and its inclusion of plant-based options, the scope of its initiatives remains limited in comparison. In this area, Brazil is a leader not only in feeding people, but also in reimagining public meals as instruments of dignity, development and rights.

What can countries learn from each other?

Portugal could benefit from Brazil's comprehensive, community-focused approach to food policy, which connects agriculture, nutrition, and community. Meanwhile, Brazil could increase its effectiveness by adopting Portugal's clear regulations and EU-supported tools, such as the School Scheme. For both countries, the next frontier is robust monitoring and evaluation - without it, even the best policies risk becoming merely symbolic.

3.3 USE ECONOMIC TOOLS TO ADDRESS FOOD AFFORDABILITY AND PURCHASE INCENTIVES (U)

How important and effective is the implementation of measures in the NOURISHING domain?

Economic tools such as subsidies, taxes and direct food assistance play a crucial role in shaping food choices and food security, particularly among low-income and vulnerable populations (Thow et al., 2018). Fiscal policies can improve the affordability of healthy foods and discourage the consumption of unhealthy, ultra-processed products, thereby influencing supply and demand (An, 2013; Pereda et al., 2024).

Increases in the price of foods high in saturated fat, sugar and salt can lead to a significant reduction in the purchase of these nutrients and improved the overall healthiness of shopping baskets and food purchases (Waterlander et al., 2019).

The WHO recommend subsidising healthy foods (e.g. fruit and vegetables) and taxing sugar-sweetened beverages (SSBs) and junk food as cost-effective public health interventions to reduce obesity and non-communicable diseases (Organization, 2024). However, price volatility can reduce the effectiveness of subsidies for healthy foods and taxes on unhealthy foods (Cobiac et al., 2017).

What measures have been implemented in Brazil?

Food taxes or tariffs related to health

Brazil applies reduced or zero VAT (ICMS and IPI) to essential food items. However, these tax exemptions are not based on nutritional profiles. Consequently, many ultra-

processed and sugary products also benefit from these incentives, which undermines public health goals by inadvertently subsidising foods linked to obesity and non-communicable diseases (NCDs) (de Lima et al., 2024).

Initiatives or subsidies related to income aim to increase the accessibility and availability of healthy food

Brazil provides basic food baskets (cestas básicas) to low-income families through local governments and social programmes. These baskets include staples such as rice, beans and oil, ensuring a baseline level of food access and contributing to household food security.

Specific initiatives or subsidies to increase the accessibility and availability of healthy food

The country has developed a robust network of public food initiatives, including:

1. The Food Acquisition Programme (PAA), which purchases food from family farmers and distributes it to schools, food banks and social institutions, thereby supporting both healthy eating and local economies (Henig, 2018);
2. The National School Feeding Programme (PNAE) offers free, nutritious meals to all students in public schools, with at least 30% of ingredients sourced from local agriculture (Emilie Sidaner et al., 2013);
3. Popular restaurants and community kitchens, which serve low-cost, balanced meals to urban populations experiencing food insecurity (A. Fagundes et al., 2022);
4. Food banks collect surplus food (including fresh produce) from retailers and redistribute it to vulnerable groups, thereby reducing both waste and hunger (A. Fagundes et al., 2022).

These initiatives are considered effective because they address food waste, hunger, **combat food insecurity,** support family agriculture and promote social protection, combining health, social and economic benefits **(Carrijo et al., 2018; Cattafesta & Salaroli, 2024; Andhressa Fagundes et al., 2022; Henig, 2018; Rocha et al., 2012; Emilie Sidaner et al., 2013)**. However, as with other public policies in Brazil, they are vulnerable to budget cuts and political shifts, which threatens their continuity and scale.

What measures have been implemented in Portugal?

Food taxes or tariffs related to health

In 2017, Portugal introduced a tax on sugar-sweetened beverages (SSBs), using a graduated model that imposes higher rates on drinks with a higher sugar content. This measure has led to industry reformulation and moderate reductions in consumption (Baptista et al., 2018; Goiana-da-Silva et al., 2020), proving cost-effective in initial evaluations (Liu et

al., 2022). However, its impact could be strengthened by applying nutrient-profile criteria and improving monitoring mechanisms.

Income-related initiatives or subsidies could increase the accessibility and availability of healthy food

Portugal provides food baskets through social assistance programmes, offering essential food items to low-income families. Recently, policy discussions have focused on replacing food baskets with prepaid food cards, which would give beneficiaries more flexibility and potentially encourage healthier choices, depending on how the scheme is regulated.

Additionally, food subsidies for public sector workers help offset the cost of meals, particularly in public institutions.

Specific initiatives or subsidies to increase the accessibility and availability of healthy food

Portugal uses differentiated VAT rates to influence consumer behaviour. Fruit and vegetables benefit from reduced VAT, while most processed and less healthy foods are taxed at the standard rate. However, some ultra-processed products, such as baby foods and cereals with poor nutritional profiles, still receive preferential VAT treatment, which undermines the health objectives of the policy. Additionally, rising inflation and food prices may offset the intended benefit of VAT reductions. Differentiating VAT rates based on health and environmental considerations could encourage a shift towards healthier and more sustainable diets (Springmann et al., 2025).

Although Portugal has made use of targeted subsidies and fiscal tools, a more comprehensive alignment with nutrition and sustainability goals, including clearer nutrient-based VAT criteria and stronger support for vulnerable groups, could enhance the reach and impact of current policies.

Which country performs best in this NOURISHING domain?

Brazil invests in access, while Portugal invests in deterrence. Brazil's strength lies in its subsidy-driven, socially integrated food programmes, which reach vulnerable populations through public procurement and direct provision. In contrast, Portugal has taken the fiscal route, using taxation to curb unhealthy consumption and aligning with broader EU strategies.

However, neither country has achieved a balanced policy. Brazil lacks fiscal disincentives for unhealthy foods, while Portugal has yet to pair its taxes with robust, income-sensitive subsidies. The true opportunity lies in combining both approaches to create an economic food policy that is both protective and transformative.

What can countries learn from each other?

Portugal could learn from Brazil's VAT exemptions to make food more affordable - but with one important change: tax benefits should be aligned with nutritional quality, not tradition. This would enable to combine social equity goals with public health objectives, thereby strengthening the link between fiscal policies and the promotion of healthy eating.

In turn, Brazil could adopt Portugal's strategic use of fiscal disincentives, such as the sugar tax, to discourage unhealthy consumption - an area where its economic policy currently falls short.

The next step for both countries is clear: they must modernise their fiscal tools using nutrient profiling and evidence-based standards, and build monitoring systems that track real dietary impact and health outcomes.

3.4 RESTRICT FOOD ADVERTISING AND OTHER FORMS OF COMMERCIAL PROMOTION (R)

How important and effective is the implementation of measures within the NOURISHING domain?

Restricting food advertising and commercial promotion, especially that targeting children, is widely recognised as one of the most effective strategies for reducing exposure to ultra-processed and unhealthy foods (Boyland et al., 2022). Such marketing influences children's food preferences, purchasing requests and consumption patterns, thereby contributing to poor dietary habits and obesity (Smith et al., 2019). The WHO strongly recommends comprehensive restrictions on the marketing of foods high in fat, sugar and salt (HFSS), particularly in places where children gather and on media platforms that they frequently use (Organization, 2023).

What measures have been implemented in Brazil?

Marketing to young people through advertising

Brazil prohibits misleading advertising under the Consumer Defense Code, and considers marketing aimed at children to be abusive under Resolution nº 163/2014 (CONANDA), which applies to children under 12. However, there are currently no national laws in place to restrict the advertising of unhealthy foods (HFSS) across media platforms, including television and digital channels (Barbosa et al., 2022).

Direct marketing to young people

There are also no binding national restrictions on direct marketing to children and adolescents via social media, mobile apps or personalised content — a growing area of concern given the increasing digital engagement of young people.

Marketing to young people through sponsorship

Sponsorship of events or content targeting children by brands associated with unhealthy foods is not specifically regulated, leaving a loophole that is widely exploited by the food and beverage industry.

Marketing to young people through measures at points of sale

Brazil lacks comprehensive regulations to limit child-directed promotions at the point of sale, such as product displays, promotional characters or pricing strategies aimed at younger audiences.

Marketing to young people through product placement and branding

There are currently no restrictions on the placement of HFSS products or their strategic branding in children's media content, whether on television, in influencer videos or in online games.

Marketing to young people through product design and packaging:

While the policy of displaying warning labels on the front of packaging identifies products high in sugar, salt, and saturated fat, it does not restrict the use of packaging designed to appeal to children, such as cartoon characters or playful designs, even on products bearing warning labels.

Marketing in and around schools

Although some local regulations have attempted to address this gap, there are currently no national laws prohibiting the promotion or sale of unhealthy foods within or around school premises.

In Brazil, food advertising is primarily regulated through self-regulation and general consumer protection laws. While CONANDA's resolution is of symbolic importance, it has not significantly reduced children's exposure to marketing of unhealthy foods, particularly on TV and social media (Barbosa et al., 2022; Boyland et al., 2022). Overall the effectiveness of this initiatives are low, primarily due to a lack of enforcement and industry resistance.

What measures have been implemented in Portugal?

Marketing to young people through advertising

Since 2019, Law nº 30/2019 has prohibited the advertising of foods high in fat, sugar and salt (HFSS) to children under 16 via TV, radio, cinema, digital platforms and in areas within 100 meters of schools and public playgrounds. This restriction is based on nutrient profiling and aligns with WHO guidelines (Garde & Xuereb, 2017).

Direct marketing to young people

The law restricts direct appeals to children, including promotional messaging, incentives and emotionally charged messaging. However, personalized marketing on digital platforms is largely unregulated.

Marketing to young people through sponsorship

Portugal prohibits the marketing of HFSS products in the context of sporting, cultural and recreational activities promoted by schools. However, sponsorship of children's television programs or other media content is not explicitly banned, creating a policy gap that allows for indirect brand exposure in broadcast and digital environments.

Marketing to young people through in-store promotions

The law includes limitations on in-store promotions targeting children, though enforcement in retail settings is partial and less visible than in broadcast media.

Marketing to young people through product placement and branding

While traditional media placement is covered by the law, there are currently no explicit provisions for online content creators or influencers who promote HFSS products via embedded marketing. This represents a significant loophole in the legislation.

Marketing to young people through product design and packaging

Portugal restricts the use of licensed characters, toys, and child-oriented packaging for HFSS products marketed to children. This helps to reduce the appeal of unhealthy foods on store shelves.

Marketing in/around schools

The marketing of HFSS foods is prohibited within 100 meters of schools and parks, thereby reinforcing protective boundaries around educational and recreational spaces.

Portugal's approach is comprehensive and evidence-based, but digital environments remain underregulated and enforcement capacity is limited (Figueira et al., 2023). In order to truly shield children from marketing of unhealthy food, surveillance and regulation must keep pace with the speed of online advertising. Nonetheless, evidence suggests that this law has had a moderate to high level of cost-effectiveness, particularly with regard to reducing children's exposure to advertising in traditional media and in school environments (Royo et al., 2025).

hich country performs best in this NOURISHING domain?

Portugal is clearly in the lead, having established a binding legal framework, backed by nutrient profiling, which restricts the marketing of unhealthy food to children across multiple platforms. By contrast, Brazil's reliance on self-regulation and general consumer protection legislation leaves children vulnerable, as fragmented policies lack the power and consistency to transform marketing environments. Protecting children's health requires more than good intentions; it demands robust legislation.

What can countries learn from each other?

Portugal provides legal clarity, while Brazil offers moral authority. Portugal's binding rules and nutrient-based restrictions provide a clear framework for enforcement. However, it could learn from Brazil's rights-based approach, which views marketing to children as a violation of fundamental rights. This would strengthen the ethical and legal foundations of public health policy.

Conversely, Brazil could benefit from Portugal's legislative precision, moving beyond fragmented rules towards comprehensive, enforceable laws that limit exposure across all media.

Ultimately, however, both countries fall short of WHO recommendations, which call for the restriction of all forms of food marketing, including brand marketing, advergames and digital engagement strategies, and the extension of protections to all children under 18. In order to meet this standard, both parties must strengthen their monitoring systems, particularly in the digital environment where food marketing is personalised, opaque and largely unregulated. Without explicit regulation of algorithm-driven content, children will remain highly exposed, regardless of what the law says on paper.

3.5 IMPROVE NUTRITIONAL QUALITY OF THE WHOLE FOOD SUPPLY (I)

How important and effective is the implementation of measures within the NOURISHING domain?

Improving the nutritional quality of the entire food supply is a critical strategy for preventing non-communicable diseases related to diet (Di Renzo et al., 2015). Reformulating processed and packaged foods by reducing levels of added sugars, saturated fats, trans fats and sodium can have a significant impact on public health, particularly in settings where ultra-processed foods dominate dietary intake (Fanzo et al., 2023). This domain also involves setting maximum limits for harmful nutrients, eliminating artificial trans fats and encouraging industry to improve product formulations. Such interventions are considered highly cost-effective (Organization, 2024), particularly when implemented through regulatory or mandatory mechanisms.

What measures have been implemented in Brazil?

<u>The limitation or elimination of specific nutrients in food products</u>

Brazil has taken significant steps to improve the nutritional profile of its food supply. Since 2011, the government has worked with the food industry to introduce voluntary targets for reducing sodium levels in processed foods. While these efforts have led to modest reductions (Nilson et al., 2017), evidence shows that voluntary measures lack the strength to

achieve sustained impact. Civil society continues to call for mandatory reformulation to accelerate progress (Gressier et al., 2025).

In 2019, ANVISA approved RDC nº 332/2019, which set a limit of 2% on industrial trans fats in oils and processed foods. A complete ban on partially hydrogenated oils (PHOs) came into force in 2023, fully aligning Brazil with the WHO's REPLACE initiative (Bösch et al., 2021). This regulation is considered highly cost-effective and is expected to significantly reduce the risk of cardiovascular disease (Nilson et al., 2022).

While these measures represent important progress, the absence of broader mandatory reformulation policies for sugar, saturated fats and other critical nutrients continues to present challenges in transforming the food supply at scale.

What measures have been implemented in Portugal?

The limitation or elimination of specific nutrients in food products

Under the Integrated Strategy for the Promotion of Healthy Eating (EIPAS), Portugal has pursued voluntary reformulation agreements with the food industry (Graça et al., 2018). These initiatives aim to reduce the sugar, salt and trans fat content of products such as soft drinks, breakfast cereals, yoghurts and soups. While some progress has been made, inconsistent compliance and the absence of mandatory regulations limit the scale and effectiveness of reformulation efforts (Goiana-da-Silva et al., 2019).

Regarding trans fats, Portugal adheres to EU Regulation nº. 649/2019, which limits the amount of industrial trans fats in foods to 2 grams per 100 grams of fat. Although partially hydrogenated oils (PHOs) have largely been removed, many manufacturers have substituted them with saturated tropical fats, such as palm oil, thereby undermining the health goals of the policy.

To meaningfully improve public health, Portugal must address the nutritional quality of replacement ingredients and consider introducing binding reformulation policies to ensure an industry-wide impact (Marakis et al., 2023).

Which country performs best in this NOURISHING domain?

Brazil sets the tone with its bold regulations, while Portugal shapes its supermarket shelves. Although Brazil's ban on industrial trans fats and efforts to reduce sodium demonstrate strong political will, results remain modest. Portugal, which relies on voluntary reformulation, has achieved more consistent improvements in product composition, particularly in categories such as yoghurts, cereals, and beverages.

This contrast reveals a deeper truth: vision alone cannot transform food environments - enforcement, incentives and industry pressure are required. By aligning with EU regulations and implementing targeted reformulation strategies, Portugal has delivered tangible changes

to product reformulation, making it the more effective performer in this area. Nonetheless, Portugal should consider moving beyond voluntary agreements to mandatory nutrient thresholds.

What can countries learn from each other?

Brazil could learn from Portugal's results-driven strategy, in which complementary policies such as taxes on sugary drinks and restrictions on marketing have been more effective in improving product quality than voluntary targets alone. Meanwhile, Portugal could adopt Brazil's bold regulatory stance, particularly the mandatory ban on industrial trans fats, moving beyond voluntary agreements towards enforceable nutrient standards. Both countries must now take the next step by scrutinizing nutrients substitutes, applying nutrient profiling and ensuring that reformulation delivers real health benefits.

3.6 SET INCENTIVES AND RULES TO CREATE A HEALTHY RETAIL AND FOOD SERVICE ENVIRONMENT (S)

How important and effective is the implementation of measures within the NOURISHING domain?

The retail and food service environment significantly influences food choices by shaping the availability, accessibility, pricing, promotion, and display of healthier options (Esfandiari Bahraseman et al., 2025), thus it can lead to meaningful improvements in diet quality and health outcomes (Mah et al., 2019).

Policy interventions - such as zoning laws, public procurement, behavioral design, fiscal policies, incentives, and marketing controls – are more effective than informational approaches alone in improving the nutritional quality of the retail environments and reduces dietary inequalities. (Lee et al., 2021). However, the success of these interventions depends on policy intensity, socioeconomic context, and whether changes are voluntary or mandatory (Mah et al., 2019). Investing in such policies is strategic and essential, particularly in areas with high rates of diet-related non-communicable diseases and food insecurity (Mah et al., 2019).

What measures have been implemented in Brazil?

Urban planning restrictions for catering establishments near schools

Some Brazilian municipalities have introduced zoning laws to restrict the number of fast food outlets near schools, with the aim of reducing children's exposure to ultra-processed foods (Novaes et al., 2022). However, these measures remain localised and inconsistent, with no national legislation to ensure they are applied uniformly across the country.

Urban planning restrictions for catering establishments

Urban planning strategies in Brazil increasingly incorporate food and nutrition considerations, particularly through the promotion of urban agriculture (Kuhn et al., 2023). These initiatives are integrated into municipal development plans to increase access to fresh food in underserved areas, thereby supporting local economies and improving food environments in vulnerable urban zones, reducing their reliance on the ultra-processed foods typically available in retail chains. They also empower community participation, and promote environmental education and food literacy, particularly when implemented in educational or social service settings.

Initiatives to increase the availability of healthier food in shops and catering establishments

Public food service programs such as Popular Restaurants offer nutritious, subsidised meals in low-income urban areas, providing an alternative to the ultra-processed food commonly found in these environments (Oliveira et al., 2020). These initiatives normalise healthy eating in the public sphere and support social inclusion. Additionally, policies that encourage the procurement of family farming produce by public institutions further expand access to healthier foods (de Souza et al., 2023).

While these efforts promote dietary equity and local food systems, their coverage remains uneven and most retail-level interventions are voluntary or governed at a municipal level. The absence of a national regulatory framework for private retail and food service environments limits their broader structural impact.

All these efforts have proven effective in improving dietary equity as they provide affordable, nutritious meals to vulnerable populations (Organization, 2021). However, coverage is uneven due to the fact that retail regulations remain voluntary or locally governed and to the budgetary constraints. This limits a broader population-level impact (Oliveira et al., 2020).

What measures have been implemented in Portugal?

Urban planning restrictions for catering establishments near schools

Portugal currently has no zoning restrictions in place for such establishments near schools, which represents a regulatory gap in limiting children's exposure to unhealthy food environments beyond school premises.

Urban planning restrictions for catering establishments

There are no national urban planning laws designed specifically to limit the density or type of food outlets based on nutritional concerns. However, environmental and sustainability goals are increasingly being integrated into public food procurement and institutional catering.

Initiatives to increase the availability of healthier food in shops and catering establishments

Portugal has introduced regulatory measures in public institutions, including:

- Law nº 11/2017, which requires all public canteens to offer at least one vegetarian option.
- Dispatch nº 11391/2017 and Dispatch nº. 8127/2021 restrict the sale of unhealthy foods in vending machines and cafeterias in hospitals and schools.

Additionally, innovative programs such as 'Prato Sustentável', led by ProVeg Portugal, are promoting the normalisation of plant-based meals in schools, universities and hospitals. These programs combine menu reformulation, staff training, nutrition education and public engagement to foster healthier and more sustainable institutional food environments.

While these initiatives reflect a progressive shift in Portugal's approach, which is grounded in health, sustainability, and food justice, they remain mostly voluntary, localised, or pilot-based. A national monitoring and evaluation framework is needed to increase the scale of the impact and ensure consistency across the food service system.

Which country performs best in this NOURISHING domain?

While, Brazil has established organised public food services that enhance access for vulnerable groups, particularly through subsidised restaurants and the purchase of produce from family farmers by institutions. Portugal, in turn, has introduced stricter controls on unhealthy foods in public places such as schools and hospitals.

However, both countries fall short in the area that matters most: the broader retail environment. Supermarkets, fast-food outlets and convenience stores remain largely untouched, highlighting the urgent need for nationwide, enforceable policies to reshape the spaces where most food choices are made.

Furthermore, urban planning is still not being used enough as a public health tool. School zones saturated with fast food outlets and neighborhoods without access to fresh produce perpetuate dietary inequalities. Without national policies that integrate urban planning, retail and healthy eating, institutional progress will be limited to those closest to regulated spaces. The urban food environment must be planned with the same rigour as a health policy.

What do countries have to learn from each other?

Portugal could learn from Brazil's approach to integrating food security into public policy. Brazil uses tools such as popular restaurants and local procurement to provide nutritious meals where they are needed most. In turn, Brazil could adopt Portugal's regulatory

discipline, particularly with regard to restrictions on unhealthy foods in schools and hospitals, as these can influence lifelong dietary habits.

However, both countries are still tiptoeing around the retail and out-of-home food environments, where most unhealthy choices are made. To effect change in this area, they must look beyond institutional walls and embrace behavioural interventions on a large scale, from strategic product placement to pricing nudges and health messaging - tools that can subtly reshape choices without restricting freedom (Bucher et al., 2016).

Instead of more isolated programmes, the next frontier is coherent national strategies combining regulation, public investment and behavioural science - such as cognitive, emotional and behavioural nudges - to create food environments that make the healthy choice the easy, accessible and affordable one, it also is a socially acceptable means of shifting consumption patterns on a large scale (Kuyer & Gordijn, 2023).

3.7 HARNESS FOOD SUPPLY CHAIN AND ACTIONS ACROSS SECTORS TO ENSURE COHERENCE WITH HEALTH (H)

How important and effective is the implementation of measures within the NOURISHING domain?

This domain is crucial for aligning food systems, from production to distribution, with public health goals. Integrating nutrition throughout the food supply chain improves policy coherence and strengthens the impact of nutrition interventions. Progress in population health depends on collaboration across sectors that connects food, health, and other systems.

Food systems influence many areas of society, including agriculture, trade, education, the environment, labour and healthcare. As such, nutrition policy cannot operate in isolation. Countries should adopt a Health in All Policies (HiAP) approach to ensure that all sectors consider the health impacts of their decisions (Cain et al., 2022). Similarly, the Food in All Policies (FiAP) approach recognises food as a means of addressing broader societal issues such as climate change, inequality and economic resilience (Hawkes & Parsons, 2019). The goals and actions of policies across all sectors, including education, urban planning and economic development, must intentionally include food (Hawkes & Parsons, 2019).

Effective multisectoral policies address the root causes of poor diets by shaping how food is produced, marketed and distributed. They also create alignment across agricultural, health, environmental, and social protection systems (Parsons et al., 2019). When food systems support public health, they can reduce disease while promoting environmental and economic sustainability, particularly in low- and middle-income countries.

Therefore, implementing this NOURISHING domain is foundational. Without it, other policy actions risk being ineffective and disconnected. Strong governance, collaboration across ministries and clear accountability are essential to ensuring that food systems promote health rather than undermine it.

What measures have been implemented in Brazil?

Measures to support food producers in increasing the supply of healthy food and decreasing the supply of unhealthy food

Brazil supports family farming through programs such as the Food Acquisition Programme (PAA) and the National School Feeding Programme (PNAE). These programs guarantee institutional markets for smallholder farmers who produce fresh, minimally processed food. Legislation also promotes urban agriculture by facilitating community and school gardens, which improve access to healthy food in underserved areas.

Measures to support food manufacturers in increasing the proportion of healthy food in the supply chain

While Brazil has engaged manufacturers in setting voluntary targets for reducing sodium, most reformulation efforts remain limited. However, the National Dietary Guidelines and public discourse on ultra-processed foods (UPFs) have increased pressure for industry accountability by framing UPFs as a public health issue rather than an individual choice.

Measures to support food retailers in increasing the availability of healthy food and decreasing the availability of unhealthy food in the supply chain

The Popular Restaurants programme provides subsidised healthy meals in urban areas and serves as a state-led model for healthier food service environments. Nevertheless, private retailers operate with little nutritional regulation, and there are few national incentives or requirements to promote healthy options in the commercial retail sector.

Governance structures for multisectoral/stakeholder engagement

Brazil's National System for Food and Nutrition Security (SISAN), established under the Organic Law on Food and Nutrition Security (LOSAN), provides a robust multisectoral governance framework. It unites the agriculture, health, education and social protection sectors, as well as civil society, to coordinate policy action, to promote food sovereignty and to address the nutrition transition. This forms a 'whole-of-system' response to complex food challenges (Moriguchi Watanabe et al., 2022).

As an example, a notable intersectoral actions include Fome Zero and Bolsa Familia, which combine food security, conditional cash transfers and health check-ups, thereby influencing dietary intake and reducing poverty.

Nutrition standards for public procurement

Public procurement policies require adherence to nutritional standards, particularly in school meal programmes and other institutional settings. The PNAE stipulates that at least 30% of food purchases should come from family farmers, and that meals should align with national nutrition guidelines. This promotes the consumption of fresh, locally sourced, culturally appropriate food.

Support for urban agriculture in health policies and planning

Urban agriculture is included in Brazil's National Food and Nutrition Policy (PNAN) and the National System for Food and Nutrition Security (SISAN), with the aim of promoting healthier food environments. The National Health Promotion Policy (PNPS) supports urban gardens as a means of encouraging healthy eating, physical activity and mental well-being, and they are often located near primary health care units. Cities such as São Paulo, Belo Horizonte and Brasília incorporate urban gardens into public health and social development programmes for therapeutic and educational purposes.

Community food production

Community Gardens are supported by municipalities through access to land, tools, training and seeds. The gardens are used for food production, education and social inclusion. Programmes such as CRAS use food production to promote skills, generate income and improve food security for low-income families.

Brazil's approach is an exemplar of a systemic, equity-driven model that links the entire food supply chain to health and social development. However, budget instability, political shifts and corporate pressure continue to pose significant threats to the continuity and scale of the policy (Moriguchi Watanabe et al., 2022).

What measures have been implemented in Portugal?

Measures to support food producers in increasing the supply of healthy food and decreasing the supply of unhealthy food

Portugal has limited direct policy instruments linking food production to nutritional outcomes. Although national strategies promote sustainable agriculture, there is no structured programme connecting small producers with institutional food supply systems, unlike in other countries. Support for healthy food production remains largely indirect, via EU Common Agricultural Policy (CAP) mechanisms and environmental sustainability agendas.

Measures to support food manufacturers in increasing the supply of healthy food and decreasing the supply of unhealthy food

Portugal has engaged with food manufacturers through voluntary reformulation agreements under the Integrated Strategy for the Promotion of Healthy Eating (EIPAS). However, without binding legislation, progress is uneven and relies on industry goodwill.

Measures to support food retailers in increasing the availability of healthy food and reducing the availability of unhealthy food in the supply chain are lacking

Currently, there are no national regulations obligating retailers to promote healthy foods. However, pilot projects and local partnerships have explored the use of nudges, better product placement and consumer information to encourage healthier choices. These remain limited in scale, however, and lack national coordination or incentives.

Governance structures for multisectoral and stakeholder involvement

In Portugal, food policy governance is coordinated through the EIPAS platform, which brings together stakeholders from the fields of health, education, agriculture and local authorities (Graça et al., 2018). It is also aligned with the broader Food in All Policies (FiAP) vision as it integrates food policy with environmental sustainability, economic development and social inclusion. Although it facilitates intersectoral dialogue, its operational capacity and enforcement power are limited, and engagement from civil society remains relatively modest.

Nutrition standards for public procurement

Portugal has introduced nutrition criteria for public procurement in schools, hospitals and public canteens.

Support for urban agriculture in health and planning policies

Despite its potential to improve local food access and sustainability, urban agriculture is not yet formally integrated into national health or urban planning strategies. Interest is growing, but existing efforts are fragmented and mostly led by municipal or civil society initiatives.

Community food production

Portugal supports community gardens and local food initiatives, often at the municipal level, but without a national framework. While these projects promote food literacy, social cohesion and environmental education, coverage remains uneven and is dependent on local leadership and resources.

Scaling up and strengthening accountability mechanisms within EIPAS could significantly enhance its cost-effectiveness and long-term public health impact (Graça et al., 2018) of the measures within this NOURISHING domain.

Which country performs best in this NOURISHING domain?

Brazil and Portugal are taking different approaches to aligning their food systems with public health, but neither is leading the way unequivocally.

Brazil brings institutional depth, while Portugal delivers adaptive agility. Brazil's food system is rooted in rights-based governance, linking local production, education and social protection through initiatives such as the National School Feeding Programme (PNAE) and

the Family Farming Programme (PAA). However, political and financial instability threatens its continuity and scope.

Meanwhile, Portugal has used EIPAS to coordinate a modern, multisectoral response, integrating nutrition into taxation, reformulation, education and sustainability. However, much of its progress relies on voluntary actions and short-term funding.

Neither country is leading the way outright. Brazil offers structure without stability, while Portugal offers innovation without permanence. The real breakthrough would be to combine Brazil's foundational architecture with Portugal's strategic responsiveness - a fusion that neither country has yet achieved.

What can countries learn from each other?

Portugal could benefit from Brazil's compulsory, equity-driven food policies, particularly its capacity to link small-scale farmers with public procurement. In turn, Brazil could adopt Portugal's bold regulatory strategies and interministerial coherence, which have even reshaped food environments through voluntary measures.

However, both countries need to think bigger. Food must be viewed as more than just a health issue; it is also a lever for climate action, equity, and resilience. This requires moving beyond pilot schemes to systems thinking, long-term investment and political accountability.

If Portugal's innovative approach were combined with Brazil's institutional strength, we would not only redesign food policy, but also redefine public health.

3.8 INFORM PEOPLE ABOUT FOOD AND NUTRITION THROUGH PUBLIC AWARENESS (I)

How important and effective is the implementation of measures within the NOURISH domain?

Informing the population about food and nutrition is essential for enabling healthier choices and fostering food literacy (Silva, 2023). Public awareness campaigns can influence knowledge, attitudes and behaviours (Boles et al., 2014), especially if they are repeated over time and supported by other regulatory or environmental measures, such as retail nudges, labelling laws and fiscal policies. The most impactful and successful mass media nutrition campaigns depend on: strategic planning involving macro-environmental support and public–private partnerships; engaging social communities through social marketing; and actual citizen adoption coupled with structural changes (Aschemann-Witzel et al., 2012). When framed in this way, public awareness becomes a cost-effective catalyst that activates and reinforces healthy eating systems (Organization, 2024).

What measures have been implemented in Brazil?

Development and communication of dietary guidelines based on food

Brazil's 2015 Dietary Guidelines for the Brazilian Population are internationally recognised for their innovative, rights-based, and culturally grounded approach. Unlike traditional guidelines, which focus on nutrients, these guidelines emphasise minimally processed foods, cooking habits, shared meals and the social, cultural and environmental dimensions of eating (Oliveira & Santos, 2020). They are designed to educate both the public and health professionals and are widely disseminated through schools, health centres, universities, social media and printed materials. They have also influenced a wide range of nutrition and health policies.

Public awareness campaigns, media campaigns and social marketing initiatives promoting healthy eating

Brazil has launched nationwide campaigns such as 'You Have the Right to Know What You Eat' (2017), which advocate for clear food labelling and raise awareness of ultra-processed foods (Giuberti Coutinho et al., 2022). These campaigns use infographics, videos, toolkits and media outreach to empower consumers and build support for front-of-package labelling legislation.

Brazil has also embraced digital health strategies to expand its outreach, particularly in underserved regions. Platforms such as 'Meu SUS Digital' and 'Conecte SUS' provide mobile health messages on nutrition, hydration and healthy habits, enhancing access, personalisation and health literacy (Fitzpatrick, 2023).

While the long-term outcomes are still being assessed, integrating communication tools with national policy and health systems gives Brazil's public awareness strategy significant reach and transformative potential.

What measures have been implemented in Portugal?

Development and communication of dietary guidelines based on food

Portugal's core dietary guidance is the Food Wheel, a visual tool that classifies foods into seven groups and shows the recommended proportions of each group. This promotes variety, balance and moderation. Portugal's guideline focuses on food groups and nutritional equivalence, making it simple and practical for everyday use.

The National Programme for the Promotion of Healthy Eating (PNPAS), led by the Direção-Geral da Saúde (DGS), incorporates the Food Wheel into various educational materials, including meal plans, seasonal food calendars and manuals for families, educators, healthcare professionals and institutional food services.

Public awareness campaigns, media campaigns and social marketing campaigns on healthy eating

Public-facing platforms such as the PNPAS website, the 'Nutrimento' blog and the 'Pensar Nutrição' website of the University of Porto offer reliable and accessible content on healthy eating, food safety and current nutrition science, targeting both lay audiences and professionals.

Portugal has also invested in nationwide campaigns such as 'Eu Escolho Comer Bem', which used television, radio and social media to encourage increased consumption of fruit and vegetables and reduced consumption of sugary and processed foods. The DGS extends its reach further through social media platforms, particularly Instagram, where it shares infographics, posts that debunk myths, recipes, and short videos aimed at younger audiences.

While Portugal's communication efforts are well-structured and widely disseminated, their impact depends on them being paired with structural policies, such as marketing restrictions and food environment reforms. Without addressing the social determinants of dietary choice, campaigns that rely heavily on individual responsibility may be ineffective among more vulnerable populations (Niederdeppe et al., 2008). Nevertheless, Portugal's robust public communication infrastructure paves the way for widespread behavioural change if it is aligned with systemic action.

Which country performs best in this NOURISHING domain?

Brazil provides in-depth information, while Portugal has a wide reach. Brazil's dietary guidelines are a global benchmark, not only for their nutritional clarity, but also for their approach to embedding food within culture, dignity and rights. Nutrition is taught not in isolation, but as part of healthcare, education and social protection, ensuring it is meaningful and equitable. However, Brazil's message struggles to break through in the digital era, where misinformation dominates and national media strategies remain underfunded. In contrast, Portugal has mastered digital engagement, reaching citizens across platforms, from blogs to Instagram. Its campaigns are polished and accessible, appearing where people live their digital lives. However, much of its messaging relies on individual responsibility and rarely addresses the structural barriers that influence food choices. Neither model alone is sufficient. The future belongs to the country that can combine Brazil's sense of purpose with Portugal's digital presence, communicating clearly, engaging equitably and transforming awareness into action.

What do countries have to learn from each other?

Portugal brings visibility; Brazil brings values. Portugal could learn from Brazil's people-first, equity-driven approach. Brazil can learn from Portugal's strength in visibility and digital communication.

Brazil's nutrition communication is grounded in rights, culture and lived experience, and is embedded in schools, clinics and social programmes. It addresses people's realities, not just nutrients. By contrast, Portugal has built a strong digital presence, crafting accessible, engaging messages that reach a wide audience across various platforms. However, both countries fall short when it comes to persuasion on a large scale. Neither country has fully embraced the emotional and behavioural strategies that the food industry uses daily to sell ultra-processed products, such as influencer marketing, emotional storytelling, advert games and branded experiences. Public health cannot afford to whisper while marketing shouts. The next frontier is clear: to use the same powerful tools as the food industry, but in the service of health, culture and equity. Until then, public health campaigns will struggle to compete in a marketplace of attention and desire.

3.9 NUTRITION ADVICE AND COUNSELLING IN HEALTH CARE SETTINGS (N)

How important and effective is the implementation of measures within the NOURISH domain?

Nutrition counselling in healthcare settings is a critical intervention that can significantly improve outcomes for obesity, diabetes and cardiovascular risk factors (Mehrtash & Manson, 2025). However, it remains underutilised due to time constraints, a lack of training and fragmented delivery.

One valuable tool for promoting routine nutrition counselling is the 5-A's framework: Assess, Advise, Agree, Assist, Arrange. Specifically adapted for nutrition care in primary settings, this model provides clinicians with a structured yet efficient process. It enables the quick evaluation of eating behaviours, the setting of collaborative goals, the provision of support for behavioural change and follow-up, and can be completed in 10–20 minutes with minimal disruption to clinical workflow (Mehrtash & Manson, 2025). When health professionals implement all five steps, especially 'Agree' and 'Assist', patients report greater motivation, confidence, and intention to change. Integrating the 5 A's into routine consultations not only makes nutrition counselling feasible and cost-effective, but also turns it into a practical tool for improving public health (Mehrtash & Manson, 2025).

Which measures have been implemented in Brazil?

Nutrition advice and counselling in primary care

Brazil has made significant advances in providing nutritional counselling through its public primary healthcare system, particularly via the Family Health Strategy (USF). Guided by the Dietary Guidelines for the Brazilian Population, the counselling provided is evidence-based, culturally relevant and tailored to the individual. Short-term interventions have demonstrated improvements in measurable health indicators such as BMI, blood pressure, cholesterol, glucose and dietary intake, with sustained effects over time (Sartorelli et al., 2005). Capacity building for professionals and training them in the Dietary Guidelines may boost providers' confidence, their knowledge and self-efficacy - an essential precursor to better patient counselling (Dias & Vilela, 2025).

Nutrition advice and counselling in healthcare settings in schools

Although Brazil's health and education systems are closely integrated, systematic, school-based nutritional counselling within healthcare services remains limited. Although nutrition education is often provided through school meals and food literacy programmes, structured counselling delivered by health professionals in school settings has not yet been widely implemented at a national level.

These strategies have proven to be effective, since they encourage long-term dietary improvements and promote locally adapted healthy eating. They are also delivered through an accessible public health system, reaching underserved communities.

Which measures have been implemented in Portugal?

Nutrition advice and counselling in primary care

Portugal has expanded access to nutritional counselling within the National Health Service (SNS) by gradually integrating nutritionists into primary care and developing tools for non-specialist healthcare professionals. A key initiative by the Direção-Geral da Saúde (DGS) was the creation of a manual based on the '5 A's' approach, which enables nurses and physicians to deliver brief, structured counselling during routine appointments, especially for the prevention and management of chronic diseases. The DGS has also developed the '10 Steps for a Healthy Diet', a concise, practical guide that aligns with Portugal's dietary guidelines. This guide is used in individual and group consultations to efficiently communicate key messages in time-limited settings.

Despite these advances, inequities persist: access to public nutrition services remains limited in rural and low-income areas, and referral pathways for nutrition care are not standardised, resulting in many patients seeking private services. Nevertheless, the development of structured tools and protocols represents significant progress towards the systematisation and scaling up of nutrition care within the SNS.

Nutrition advice and counselling in healthcare settings in schools

Portugal does not yet offer systematic nutrition counselling by health professionals in school settings. While school food policies and educational materials promote healthy eating, direct, clinical-style counselling in schools remains underdeveloped and is not integrated into the broader school health system.

Nutrition care in primary care settings and in schools is effective, particularly in the prevention and management of chronic diseases such as obesity (Barnes et al., 2022).

Which country performs best in this NOURISHING domain?

Brazil reaches further, while Portugal digs deeper. Brazil's community-based model integrates nutrition into primary care and social protection, prioritising access for vulnerable groups. Its employment of nutritionists within multidisciplinary teams and national social programmes demonstrates an institutional commitment to equity. Meanwhile, Portugal offers more structured protocols and professional regulation, but services are unevenly distributed and often under-resourced.

Neither country has yet made nutrition counselling a universal right. Until access is guaranteed regardless of income or geography, and nutrition is treated as essential rather than optional, both systems will fall short of their potential. The challenge now lies in scaling up, funding, expanding the workforce and fully integrating the chosen model.

What do countries have to learn from each other?

Brazil demonstrates how to integrate nutrition into daily life, while Portugal illustrates how to systematise it. Portugal could adopt Brazil's rights-based, community-integrated model, in which nutrition forms part of social protection rather than being viewed solely as a clinical service. In turn, Brazil could learn from Portugal's structured tools and protocols, which bring clarity and consistency to care.

However, both countries must acknowledge the fact that nutrition remains secondary in healthcare. In order to address the challenges posed by chronic disease, inequality and climate change, food must be recognised as essential medicine, not just optional advice.

3.10 GIVE NUTRITION EDUCATION AND SKILLS (G)

How important and effective is the implementation of measures in the respective NOURISH domain?

Nutrition education and skill-building are essential catalysts for transforming knowledge into action. An hands-on, behaviourally focused, theory-based and embedded in supportive systems nutrition education programmes, rather than mere information dissemination, are the most effective in fostering dietary change. Key success drivers include (Contento et al., 1995): targeted, realistic objectives (ideally no more than three); adequate

duration (≥ 5 months increases impact); use of self-assessment and personalised feedback; active participation, such as workshops, cooking or gardening; integrated support from policy and community environments**.**

Investment in nutrition education is not optional - it is a strategic health intervention. Effective nutrition education requires a structural approach: skilled people teaching real skills over time in a supportive environment (Contento et al., 1995).

Which measures have been implemented in Brazil?

Nutrition education in curricula

In Brazil, food and nutrition education (FNE) is integrated into the national basic education curriculum through subjects such as biology, geography and chemistry (Moriguchi Watanabe et al., 2022). The content is aligned to the goals of the National School Feeding Programme (PNAE). Class discussions and participatory activities support themes such as food security, healthy eating, and sustainability.

Training for educators

The government promotes training for teachers and school staff to implement FNE using culturally relevant and participatory methods. This enables them to incorporate nutrition themes into classroom practice and school culture.

Training for health professionals

Health workers in primary care, particularly those in Family Health Units (USF) and Basic Health Units (UBS), receive training in delivering nutrition education through workshops, counselling and home visits. This training focuses on local food systems and healthy dietary habits.

Culinary skills

Schools and health units often organise cooking workshops, food preparation demonstrations and community kitchen activities to increase cooking confidence and reduce reliance on ultra-processed foods.

Training in schools on growing food

Many schools participating in the PNAE implement school gardens, connecting students to food production, environmental awareness, and the value of fresh, local ingredients.

Training for catering professionals

Staff involved in public programmes such as PNAE and popular restaurants receive training in preparing meals that align with nutritional guidelines, ensuring that the resulting menus are both culturally appropriate and nutritionally adequate.

Brazil's approach to food education is holistic and adaptable, and is firmly rooted in public policy with a strong emphasis on equity and participation. These strategies are effective in improving food literacy and dietary behaviours.

What measures have been implemented in Portugal?

Portugal has increasingly recognised the importance of equipping citizens, particularly those in school and institutional settings, with practical nutrition skills (Graça et al., 2021).

Nutrition education in curricula

In Portugal, food literacy and healthy eating education have been integrated into the national school curriculum. This is supported by teaching materials developed by the National Programme for the Promotion of Healthy Eating (PNPAS) and the General Directorate of Education (DGE). These resources encourage balanced diets, reading food labels, and making sustainable food choices.

Training for educators

Teachers receive training and toolkits to support the delivery of nutrition-related content and help create healthy school food environments. However, participation often depends on local initiatives or project-based funding.

Training for health professionals

Although not systematic, the DGS and PNPAS offer online courses and guidance materials for health professionals and the general public. These include modules on meal planning, budget-friendly cooking, and food label interpretation.

Culinary skills

Schools and municipalities have implemented cooking workshops and hands-on food activities, often in partnership with NGOs or local councils. These activities aim to improve students' and families' practical food preparation skills.

Training in schools on growing food

Some schools run gardening projects that engage students with food production and sustainability. However, these projects remain localised and are not yet coordinated nationally.

Training for catering professionals

There are initiatives to train school food staff in healthy food preparation and menu planning, often in conjunction with updated nutritional standards for school meals. However, these training programmes are not yet standardised nationwide.

Portugal's approach demonstrates growing momentum in nutrition education, particularly in urban areas. Nevertheless, many initiatives remain pilot-based or fragmented,

with limited long-term evaluation. While the foundation is promising, greater investment and national coordination are required to achieve scale and equity.

Which country performs best in this NOURISHING domain?

Brazil delivers reach, while Portugal delivers refinement. Brazil embeds nutrition education across sectors, with a focus on equity, community integration and national programmes. Portugal excels in structured resources and digital tools, but many initiatives remain localised and limited in scale. Brazil offers depth and inclusion, while Portugal brings design and innovation. Rather than choosing between them, the real benchmark lies in combining Brazil's reach with Portugal's precision to build food education that is both universal and transformative.

What can countries learn from each other?

Portugal could learn from Brazil's approach to embedding nutrition education into daily life, treating it as a right rather than an added bonus. Brazil integrates food literacy into school meals, healthcare, and communities, providing Portugal with a model for turning its pilot projects into permanent policy.

In turn, Brazil can learn from Portugal's strengths in terms of structure, such as teacher training, quality-assured materials and scalable digital tools that enhance consistency and reach.

However, both countries must do more: invest in impact evaluations and scale up successful initiatives, especially those targeting children and young people. Nutrition education is not just about knowledge; it is also about autonomy, daily practice and shaping a culture of health.

4 CONCLUSION

Nutrition policy is no longer optional - it is a public health imperative. The complexity of diet-related disease and food insecurity demands coordinated, systemic policy action across all ten NOURISHING domains.

This review reveals that Brazil and Portugal have complementary strengths. Brazil's policies are rooted in the right to food and prioritise equity, offering widespread institutional reach. Portugal offers structured governance, regulatory precision, and innovation in communication. Yet both countries face blind spots - especially in economic tools, retail environment interventions, and consistent monitoring.

Stronger health outcomes emerge when policies work together - not in isolation. Portugal could adopt Brazil's model of food as a right, integrated into education and

healthcare. Brazil could benefit from Portugal's structured tools, accountability mechanisms, and strategic nudges to drive reformulation.

Together, these "brother nations" can forge a more effective, fair, and sustainable path forward. Their combined experience could serve as a blueprint for countries worldwide seeking to build food systems that nourish people, economies, and the planet.

REFERENCES

Agurs-Collins, T., Alvidrez, J., ElShourbagy Ferreira, S., Evans, M., Gibbs, K., Kowtha, B., Pratt, C., Reedy, J., Shams-White, M., & Brown, A. G. (2024). Perspective: Nutrition health disparities framework: A model to advance health equity. Advances in Nutrition, 15(4), Article 100194. https://doi.org/10.1016/j.advnut.2024.100194

Álvares, L., & Amaral, T. F. (2014). Food insecurity and associated factors in the Portuguese population. Food & Nutrition Bulletin, 35(4), S395–S403. https://doi.org/10.1177/156482651403500401

An, R. (2013). Effectiveness of subsidies in promoting healthy food purchases and consumption: A review of field experiments. Public Health Nutrition, 16(7), 1215–1228. https://doi.org/10.1017/S1368980012004715

Andreeva, V. A., Egnell, M., Touvier, M., Galan, P., Julia, C., & Hercberg, S. (2021). International evidence for the effectiveness of the front-of-package nutrition label called Nutri-Score. Central European Journal of Public Health, 29(1), 76–79. https://doi.org/10.21101/cejph.a6239

Aschemann-Witzel, J., Pérez-Cueto, F. J. A., Strand, M., Verbeke, W., & Bech-Larsen, T. (2012). Factores de éxito en campañas de alimentación saludable: Un estudio de casos. Nutrición Hospitalaria, 27(5), 1536–1541. https://doi.org/10.3305/nh.2012.27.5.5916

Baptista, S., da Silva, F., Silva, D., Landerset, F., Simões, A., Gregório, M. J., Saraiva, A., & Belona, S. (2018). Impacto do imposto especial sobre o consumo de bebidas açucaradas e adicionadas de edulcorantes: Relatório do grupo de trabalho (Despacho N.º 2774/2018).

Barbosa, I., Leite, F., & Britto, C. (2022). Restricting unhealthy food and beverage advertising in Brazil: Challenges and opportunities. Journal of Law, Medicine & Ethics, 50(2), 291–297. https://doi.org/10.1017/jme.2022.54

Barnes, K. A., Szewczyk, Z., Kelly, J. T., Campbell, K. L., & Ball, L. E. (2022). How cost-effective is nutrition care delivered in primary healthcare settings? A systematic review of trial-based economic evaluations. Nutrition Reviews, 80(6), 1480–1496. https://doi.org/10.1093/nutrit/nuab082

Boles, M., Adams, A., Gredler, A., & Manhas, S. (2014). Ability of a mass media campaign to influence knowledge, attitudes, and behaviors about sugary drinks and obesity. Preventive Medicine, 67(Suppl. 1), S40–S45. https://doi.org/10.1016/j.ypmed.2014.07.023

Bösch, S., Westerman, L., Renshaw, N., & Pravst, I. (2021). Trans fat free by 2023—A building block of the COVID-19 response [Perspective]. Frontiers in Nutrition, 8, Article 645750. https://doi.org/10.3389/fnut.2021.645750

Boyland, E., McGale, L., Maden, M., Hounsome, J., Boland, A., & Jones, A. (2022). Systematic review of the effect of policies to restrict the marketing of foods and non-alcoholic beverages to which children are exposed. Obesity Reviews, 23(8), Article e13447. https://doi.org/10.1111/obr.13447

Bucher, T., Collins, C., Rollo, M. E., McCaffrey, T. A., De Vlieger, N., Van der Bend, D., Truby, H., & Perez-Cueto, F. J. A. (2016). Nudging consumers towards healthier choices: A systematic review of positional influences on food choice. British Journal of Nutrition, 115(12), 2252–2263. https://doi.org/10.1017/S0007114516001653

Cain, R., Greece, J. A., Galea, S., Knight, E. K., Manco, A., Parikh, A., & Jones, D. K. (2022). Improving health across sectors: Best practices for the implementation of health in all policies approaches. Preventive Medicine Reports, 29, Article 101961. https://doi.org/10.1016/j.pmedr.2022.101961

Carrijo, A. D. P., Botelho, R. B. A., Akutsu, R. D. C. C. d. A., & Zandonadi, R. P. (2018). Is what low-income Brazilians are eating in popular restaurants contributing to promote their health? Nutrients, 10(4), Article 414. https://www.mdpi.com/2072-6643/10/4/414

Cattafesta, M., & Salaroli, L. B. (2024). Beyond ultra-processed foods: The new direction of the basic food basket in Brazil. Journal of Human Growth and Development, 34(1), 6–10.

Cobiac, L. J., Tam, K., Veerman, L., & Blakely, T. (2017). Taxes and subsidies for improving diet and population health in Australia: A cost-effectiveness modelling study. PLoS Medicine, 14(2), Article e1002232. https://doi.org/10.1371/journal.pmed.1002232

Conde, W. L., & Monteiro, C. A. (2014). Nutrition transition and double burden of undernutrition and excess of weight in Brazil. The American Journal of Clinical Nutrition, 100(6), 1617S–1622S. https://doi.org/10.3945/ajcn.114.084764

Contento, I., Balch, G. I., Bronner, Y. L., Lytle, L., Maloney, S., Olson, C., & Swadener, S. S. (1995). The effectiveness of nutrition education and implications for nutrition education policy, programs, and research: A review of research. Journal of Nutrition Education, 27(6), 277–418.

de Lima, B. E., Rodrigues, M. A. M., Andrade, M. S., Vancini, R. L., & de Lira, C. A. B. (2024). Brazil's tax exemption on ultra-processed foods: A public health setback. Lancet Regional Health – Americas, 40, Article 100927. https://doi.org/10.1016/j.lana.2024.100927

de Souza, S. R. G., Vale, D., do Nascimento, H. I. F., Nagy, J. C., da Silva Junior, A. H. M., Rolim, P. M., & Seabra, L. M. A. J. (2023). Food purchase from family farming in public institutions in the Northeast of Brazil: A tool to reach sustainable development goals. Sustainability, 15(3), Article 2220. https://www.mdpi.com/2071-1050/15/3/2220

Di Renzo, L., Colica, C., Carraro, A., Cenci Goga, B., Marsella, L. T., Botta, R., Colombo, M. L., Gratteri, S., Chang, T. F., Droli, M., Sarlo, F., & De Lorenzo, A. (2015). Food safety and nutritional quality for the prevention of non-communicable diseases: The Nutrient, Hazard Analysis and Critical Control Point process (NACCP). Journal of Translational Medicine, 13, Article 128. https://doi.org/10.1186/s12967-015-0484-2

Dias, L. C. G. D., & Vilela, A. B. (2025). Food and nutrition education in Brazilian primary health care. Revista Delos, 18(67), Article e5069.

Educação, F. N. d. D. d. (n.d.). Programa Nacional de Alimentação Escolar (PNAE). Retrieved July 2025, from https://www.gov.br/fnde/pt-br/acesso-a-informacao/acoes-e-programas/programas/pnae

Esfandiari Bahraseman, S., Dashtabi, M. D., Firoozzare, A., Boccia, F., Pakook, S., & Covino, D. (2025). Understanding consumer behavior in the choice of healthy food retail outlets: An examination of information types and the interplay between institutional trust and social recommendations. Economic Analysis and Policy, 86, 2070–2094. https://doi.org/10.1016/j.eap.2025.05.035

Estivaleti, J. M., Guzman-Habinger, J., Lobos, J., Azeredo, C. M., Claro, R., Ferrari, G., Adami, F., & Rezende, L. F. M. (2022). Time trends and projected obesity epidemic in Brazilian adults between 2006 and 2030. Scientific Reports, 12(1), Article 12699. https://doi.org/10.1038/s41598-022-16934-5

Fagundes, A., de Cássia Lisboa Ribeiro, R., de Brito, E. R. B., Recine, E., & Rocha, C. (2022). Public infrastructure for food and nutrition security in Brazil: Fulfilling the constitutional commitment to the human right to adequate food. Food Security, 14(4), 897–905. https://doi.org/10.1007/s12571-022-01272-1

Fanzo, J., McLaren, R., Bellows, A., & Carducci, B. (2023). Challenges and opportunities for increasing the effectiveness of food reformulation and fortification to improve dietary and nutrition outcomes. Food Policy, 119, Article 102515. https://doi.org/10.1016/j.foodpol.2023.102515

Fanzo, J., Rudie, C., Sigman, I., Grinspoon, S., Benton, T. G., Brown, M. E., Covic, N., Fitch, K., Golden, C. D., Grace, D., Hivert, M. F., Huybers, P., Jaacks, L. M., Masters, W. A., Nisbett, N., Richardson, R. A., Singleton, C. R., Webb, P., & Willett, W. C. (2022). Sustainable food systems and nutrition in the 21st century: A report from the 22nd annual Harvard Nutrition Obesity Symposium. The American Journal of Clinical Nutrition, 115(1), 18–33. https://doi.org/10.1093/ajcn/nqab315

Figueira, M., Araújo, J., & Gregório, M. J. (2023). Monitoring food marketing directed to Portuguese children broadcasted on television. Nutrients, 15(17), Article 3800. https://doi.org/10.3390/nu15173800

Fitzpatrick, P. J. (2023). Improving health literacy using the power of digital communications to achieve better health outcomes for patients and practitioners. Frontiers in Digital Health, 5, Article 1264780. https://doi.org/10.3389/fdgth.2023.1264780

Fransvea, A., Celano, G., Pagliarone, C. N., Disanto, C., Balzaretti, C., Celano, G. V., & Bonerba, E. (2014). Food labelling: A brief analysis of European Regulation 1169/2011. Italian Journal of Food Safety, 3(3), Article 1703. https://doi.org/10.4081/ijfs.2014.1703

Garde, A., & Xuereb, G. (2017). The WHO recommendations on the marketing of food and non-alcoholic beverages to children. European Journal of Risk Regulation, 8(2), 211–223. https://doi.org/10.1017/err.2017.20

Giuberti Coutinho, J., Feldenheimer da Silva, A. C., de Castro, I. R. R., Recine, E., Makuta, G., Rocha, N. C., Johns, P., & Barbosa, R. (2022). The challenges of front-of-package

labeling in Brazil. Frontiers in Nutrition, 9, Article 921421. https://doi.org/10.3389/fnut.2022.921421

Goiana-da-Silva, F., Cruz, E. S. D., Allen, L., Nunes, A. M., Calhau, C., Rito, A., Bento, A., Miraldo, M., & Darzi, A. (2019). Portugal's voluntary food reformulation agreement and the WHO reformulation targets. Journal of Global Health, 9(2), Article 020315. https://doi.org/10.7189/jogh.09.020315

Goiana-da-Silva, F., Severo, M., Cruz e Silva, D., Gregório, M. J., Allen, L. N., Muc, M., Morais Nunes, A., Torres, D., Miraldo, M., & Ashrafian, H. (2020). Projected impact of the Portuguese sugar-sweetened beverage tax on obesity incidence across different age groups: A modelling study. PLoS Medicine, 17(3), Article e1003036. https://doi.org/10.1371/journal.pmed.1003036

Gorski, M. T., & Roberto, C. A. (2015). Public health policies to encourage healthy eating habits: Recent perspectives. Journal of Healthcare Leadership, 7, 81–90. https://doi.org/10.2147/JHL.S69188

Graça, P., Gregório, M. J., de Sousa, S. M., Brás, S., Penedo, T., Carvalho, T., Bandarra, N. M., Lima, R. M., Simão, A. P., Goiana-da-Silva, F., Freitas, M. G., & Araújo, F. F. (2018). A new interministerial strategy for the promotion of healthy eating in Portugal: Implementation and initial results. Health Research Policy and Systems, 16(1), Article 102. https://doi.org/10.1186/s12961-018-0380-3

Graça, P., Gregório, M. J., & Freitas, M. d. G. (2021). A decade of food and nutrition policy in Portugal (2010–2020). Portuguese Journal of Public Health, 38(2), 94–118. https://doi.org/10.1159/000510257

Gregório, M. J., Rodrigues, A. M., Graça, P., de Sousa, R. D., Dias, S. S., Branco, J. C., & Canhão, H. (2018). Food insecurity is associated with low adherence to the Mediterranean diet and adverse health conditions in Portuguese adults. Frontiers in Public Health, 6, Article 38. https://doi.org/10.3389/fpubh.2018.00038

Gressier, M., Frost, G., Hill, Z., Li, D., Olney, J., Pineda, E., Targett, V., Young, M., & Sassi, F. (2025). The effectiveness of mandatory v. voluntary food reformulation policies: A rapid review. British Journal of Nutrition, 133(6), 737–750. https://doi.org/10.1017/S0007114524001326

Hawkes, C., & Parsons, A. (2019). Rethinking food policy: A fresh approach to policy and practice brief 1: Tackling food systems challenges: The role of food policy. Centre for Food Policy, City University of London.

Henig, E. V. (2018). A efetividade do programa de aquisição de alimentos como política de combate à pobreza. Revista Gestão & Políticas Públicas, 8(2), 226–241.

Jones, A., Neal, B., Reeve, B., Ni Mhurchu, C., & Thow, A. M. (2019). Front-of-pack nutrition labelling to promote healthier diets: Current practice and opportunities to strengthen regulation worldwide. BMJ Global Health, 4(6), Article e001882. https://doi.org/10.1136/bmjgh-2019-001882

Kuhn, E. A., Rorato, G. Z., Mello, B. C. E. d., & Falcão, C. C. (2023). Overview of laws for urban agriculture in Brazil: Association with urban planning. Ambiente & Sociedade, 26, Article e00152. https://doi.org/10.1590/1809-4422asoc202200152vu2023L1AO

Kuyer, P., & Gordijn, B. (2023). Nudge in perspective: A systematic literature review on the ethical issues with nudging. Rationality and Society, 35(2), 191–230. https://doi.org/10.1177/10434631231155005

Lee, A. J., Cullerton, K., & Herron, L. M. (2021). Achieving food system transformation: Insights from a retrospective review of nutrition policy (in)action in high-income countries. International Journal of Health Policy and Management, 10(12), 766–783. https://doi.org/10.34172/ijhpm.2020.188

Liu, S., Veugelers, P. J., Liu, C., & Ohinmaa, A. (2022). The cost effectiveness of taxation of sugary foods and beverages: A systematic review of economic evaluations. Applied Health Economics and Health Policy, 20(2), 185–198. https://doi.org/10.1007/s40258-021-00685-x

Mah, C. L., Luongo, G., Hasdell, R., Taylor, N. G. A., & Lo, B. K. (2019). A systematic review of the effect of retail food environment interventions on diet and health with a focus on the enabling role of public policies. Current Nutrition Reports, 8(4), 411–428. https://doi.org/10.1007/s13668-019-00295-z

Marakis, G., Kotopoulou, S., Proestos, C., Skoulika, S., Boukouvalas, G., Papaioannou, A., Mousia, Z., Papadimitriou, D., Katri, E. M., Naska, A., Chourdakis, M., Zampelas, A., & Magriplis, E. (2023). Changes of trans and saturated fatty acid content in savory baked goods from 2015 to 2021 and their effect on consumers' intake using substitution models: A study conducted in Greece. The American Journal of Clinical Nutrition, 118(5), 1010–1019. https://doi.org/10.1016/j.ajcnut.2023.08.014

Mehrtash, F., & Manson, J. E. (2025). The 5 A's approach to promoting nutrition counseling in primary care. Journal of Primary Care & Community Health, 16, Article 21501319251338566. https://doi.org/10.1177/21501319251338566

Min, J., Zhao, Y., Slivka, L., & Wang, Y. (2018). Double burden of diseases worldwide: Coexistence of undernutrition and overnutrition-related non-communicable chronic diseases. Obesity Reviews, 19(1), 49–61. https://doi.org/10.1111/obr.12605

Moriguchi Watanabe, L., Bernardes Pereira Delfino, H., Augusta de Souza Pinhel, M., Noronha, N. Y., Maria Diani, L., Cintra do Prado Assumpção, L., Ferreira Nicoletti, C., & Barbosa Nonino, C. (2022). Food and nutrition public policies in Brazil: From malnutrition to obesity. Nutrients, 14(12), Article 2472. https://www.mdpi.com/2072-6643/14/12/2472

Mozaffarian, D., Angell, S. Y., Lang, T., & Rivera, J. A. (2018). Role of government policy in nutrition—Barriers to and opportunities for healthier eating. BMJ, 361, Article k2426. https://doi.org/10.1136/bmj.k2426

Mussio, B. R. (2015). A alimentação no âmbito da assistência estudantil para o ensino superior: Uma análise das universidades federais brasileiras. Revista de Nutrição, 28(5), 565–576.

Niederdeppe, J., Bu, Q. L., Borah, P., Kindig, D. A., & Robert, S. A. (2008). Message design strategies to raise public awareness of social determinants of health and population health disparities. The Milbank Quarterly, 86(3), 481–513. https://doi.org/10.1111/j.1468-0009.2008.00530.x

Nilson, E. A. F., Khandpur, N., & da Silva Gomes, F. (2022). Development and application of the TFA macrosimulation model: A case study of modelling the impact of trans fatty acid (TFA) elimination policies in Brazil. BMC Public Health, 22(1), Article 2010. https://doi.org/10.1186/s12889-022-14361-9

Nilson, E. A. F., Spaniol, A. M., Gonçalves, V. S. S., Oliveira, M. L., Campbell, N., L'Abbé, M., & Jaime, P. C. (2017). The impact of voluntary targets on the sodium content of processed foods in Brazil, 2011–2013. Journal of Clinical Hypertension, 19(10), 939–945. https://doi.org/10.1111/jch.13044

Novaes, T. G., Mendes, L. L., Almeida, L. F. F., Ribeiro, A. Q., Costa, B. V. d. L., Claro, R. M., & Pessoa, M. C. (2022). Availability of food stores around Brazilian schools. Ciência & Saúde Coletiva, 27(6), 2373–2383. https://doi.org/10.1590/1413-81232022276.13522021

Oliveira, A., Araújo, J., Severo, M., Correia, D., Ramos, E., Torres, D., Lopes, C., Vilela, S., Guiomar, S., Oliveira, L., Alarcão, V., Nicola, P., Mota, J., Teixeira, P., Soares, S., Andersen, L. F., & IAN-AF Consortium. (2018). Prevalence of general and abdominal obesity in Portugal: Comprehensive results from the National Food, Nutrition and Physical Activity Survey 2015–2016. BMC Public Health, 18(1), Article 614. https://doi.org/10.1186/s12889-018-5480-z

Oliveira, J. T. C. d., Gabriel, C. G., Vasconcelos, F. d. A. G. d., Machado, M. L., Soar, C., & Fagundes, A. (2020). Government-subsidized restaurants in Brazil: An evaluation within the framework of food and nutrition security. Revista de Nutrição, 33, Article e200085. https://doi.org/10.1590/1678-9865202033e200085

Oliveira, M. S. d. S., & Santos, L. A. d. S. (2020). Dietary guidelines for Brazilian population: An analysis from the cultural and social dimensions of food. Ciência & Saúde Coletiva, 25(6), 2519–2528. https://doi.org/10.1590/1413-81232020256.24372018

Padrão, S. M., & Aguiar, O. B. D. (2018). Restaurante popular: A política social em questão. Physis: Revista de Saúde Coletiva, 28(3), Article e280319. https://doi.org/10.1590/S0103-73312018280319

Parsons, K., Hawkes, C., & Wells, R. (2019). Rethinking food policy: A fresh approach to policy and practice. Brief 5: Policy coherence in food systems. Centre for Food Policy, City University of London.

Pereda, P. C., Moz-Christofoletti, M. A., Duran, A. C., Louzada, M. L. d. C., & Ng, S. W. (2024). Equity-driven fiscal policies: Taxing ultra-processed products and subsidizing minimally processed foods. Food Policy, 126, Article 102667. https://doi.org/10.1016/j.foodpol.2024.102667

Pineda, E., Poelman, M. P., Aaspõllu, A., Bica, M., Bouzas, C., Carrano, E., De Miguel-Etayo, P., Djojosoeparto, S., Blenkuš, M. G., Graca, P., Geffert, K., Hebestreit, A., Helldan, A., Henjum, S., Huseby, C. S., Gregório, M. J., Kamphuis, C., Laatikainen, T., Løvhaug, A. L., Leydon, C., Luszczynska, A., Mäki, P., Martínez, J. A., Raulio, S., Romaniuk, P., Roos, G., Salvador, C., Sassi, F., Silano, M., Sotlar, I., Specchia, M. L., de Arriaga, M. T., Terragni, L., Torheim, L. E., Tur, J. A., von Philipsborn, P., Harrington, J. M., & Vandevijvere, S. (2022). Policy implementation and priorities to create healthy food environments using the Healthy Food Environment Policy Index (Food-EPI): A pooled

level analysis across eleven European countries. The Lancet Regional Health – Europe, 23, Article 100522. https://doi.org/10.1016/j.lanepe.2022.100522

Rocha, C., Burlandy, L., & Maluf, R. (2012). Small farms and sustainable rural development for food security: The Brazilian experience. Development Southern Africa, 29(4), 519–529. https://doi.org/10.1080/0376835X.2012.715438

Rodrigues, J., Saraiva, C., García-Díez, J., Castro, J., & Esteves, A. (2025). Evaluating the effectiveness of food safety policies in Portugal: A stakeholder-based analysis of challenges and opportunities for food safety governance. Foods, 14(9), Article 1534. https://doi.org/10.3390/foods14091534

Royo, M., Cavero-Esponera, C., & Romero-Fernández, M. (2025). Impact of food advertising restrictions in Portugal on children's exposure to unhealthy foods and beverages: A before-and-after study. Research Square. https://doi.org/10.21203/rs.3.rs-6013827/v1

Sartorelli, D. S., Sciarra, E. C., Franco, L. J., & Cardoso, M. A. (2005). Beneficial effects of short-term nutritional counselling at the primary health-care level among Brazilian adults. Public Health Nutrition, 8(7), 820–825. https://doi.org/10.1079/PHN2005737

Saúde, M. d. (1988). Constituição da República Federativa do Brasil. Retrieved July 2025, from http://www.planalto.gov.br/ccivil_03/constituicao/ConstituicaoCompilado.htm#adct

Saúde, M. d. (2017). Princípios gerais na prestação de cuidados de saúde. Retrieved July 2025, from https://www.sns.gov.pt/reforma-faq/principios-gerais-na-prestacao-de-cuidados-de-saude-%E2%80%A2-enquadramento/

Senda, M. V. G., Raposo, A., Teixeira-Lemos, E., Chaves, C., Alturki, H. A., Alsharari, Z. D., & Romão, B. (2024). Brazilian front-of-package labeling: A product compliance analysis 12 months after implementation of regulations. Nutrients, 16(3), Article 343. https://www.mdpi.com/2072-6643/16/3/343

Shangguan, S., Afshin, A., Shulkin, M., Ma, W., Marsden, D., Smith, J., Saheb-Kashaf, M., Shi, P., Micha, R., Imamura, F., & Mozaffarian, D. (2019). A meta-analysis of food labeling effects on consumer diet behaviors and industry practices. American Journal of Preventive Medicine, 56(2), 300–314. https://doi.org/10.1016/j.amepre.2018.09.024

Sidaner, E., Balaban, D., & Burlandy, L. (2013). The Brazilian school feeding programme: An example of an integrated programme in support of food and nutrition security. Public Health Nutrition, 16(6), 989–994. https://doi.org/10.1017/S1368980012005101

Silva, P. (2023). Food and nutrition literacy: Exploring the divide between research and practice. Foods, 12(14), Article 2751. https://www.mdpi.com/2304-8158/12/14/2751

Smith, R., Kelly, B., Yeatman, H., & Boyland, E. (2019). Food marketing influences children's attitudes, preferences and consumption: A systematic critical review. Nutrients, 11(4), Article 875. https://doi.org/10.3390/nu11040875

Soares, P., Martinelli, S. S., Davó-Blanes, M. C., Fabri, R. K., Clemente-Gómez, V., & Cavalli, S. B. (2021). Government policy for the procurement of food from local family farming in Brazilian public institutions. Foods, 10(7), Article 1604. https://www.mdpi.com/2304-8158/10/7/1604

Springmann, M., Dinivitzer, E., Freund, F., Jensen, J. D., & Bouyssou, C. G. (2025). A reform of value-added taxes on foods can have health, environmental and economic benefits in Europe. Nature Food, 6(2), 161–169. https://doi.org/10.1038/s43016-024-01097-5

Taillie, L. S., Bercholz, M., Popkin, B., Reyes, M., Colchero, M. A., & Corvalán, C. (2021). Changes in food purchases after the Chilean policies on food labelling, marketing, and sales in schools: A before and after study. The Lancet Planetary Health, 5(8), e526–e533. https://doi.org/10.1016/S2542-5196(21)00172-8

Thow, A. M., Downs, S. M., Mayes, C., Trevena, H., Waqanivalu, T., & Cawley, J. (2018). Fiscal policy to improve diets and prevent noncommunicable diseases: From recommendations to action. Bulletin of the World Health Organization, 96(3), 201–210. https://doi.org/10.2471/BLT.17.195982

VIGISAN. (2022). Insegurança alimentar e COVID-19 no Brasil. II Inquérito Nacional sobre Insegurança Alimentar no Contexto da Pandemia da COVID-19 no Brasil. Rede Brasileira de Pesquisa em Soberania e Segurança Alimentar—PENSSAN.

Vlad, I., Oldridge-Turner, K., Klepp, K. I., Rutter, H., Mathisen, J. R., Helleve, A., Fismen, A. S., Harbron, J., Hendricks, G., Malczyk, S., Sing, F., Kokkorou, M., Fanian, D., O'Mara, J., Mitrou, G., Wiseman, M., & Allen, K. (2023). The development of the NOURISHING and MOVING benchmarking tools to monitor and evaluate national governments' nutrition and physical activity policies to address obesity in the European region. Obesity Reviews, 24(Suppl. 1), Article e13541. https://doi.org/10.1111/obr.13541

Waterlander, W. E., Jiang, Y., Nghiem, N., Eyles, H., Wilson, N., Cleghorn, C., Genç, M., Swinburn, B., Mhurchu, C. N., & Blakely, T. (2019). The effect of food price changes on consumer purchases: A randomised experiment. The Lancet Public Health, 4(8), e394–e405. https://doi.org/10.1016/S2468-2667(19)30105-7

World Health Organization. (2021). Action framework for developing and implementing public food procurement and service policies for a healthy diet. World Health Organization.

World Health Organization. (2023). Policies to protect children from the harmful impact of food marketing: WHO guideline. World Health Organization.

World Health Organization. (2024). Tackling NCDs: Best buys and other recommended interventions for the prevention and control of noncommunicable diseases. World Health Organization.