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Fiscal policy repurposing as a tool to enable healthy diets

[A review of available evidence](#)



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Required citation:

Rub, A. 2026. *Fiscal policy repurposing as a tool to enable healthy diets – A review of available evidence*. Rome, FAO.
<https://doi.org/10.4060/cd8684en>

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ISBN 978-92-5-140561-1

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Acknowledgements

This paper was prepared as a background document for a policy webinar organized by the Technical Network on Poverty Analysis (THINK-PA) of the Food and Agriculture Organization of the United Nations (FAO).

The author wishes to express their sincere appreciation to Ana Paula de la O Campos (Agrifood Economics and Policy Division [ESA], FAO) for her valuable guidance and constructive feedback throughout the preparation of this work.

Finally, the author would like to thank the ESA Editorial Board, in particular Pedro Morais de Sousa and Andrea Cattaneo (ESA, FAO) for their careful review of the report, and Daniela Verona (ESA, FAO), for her editorial and layout support, as well as for coordinating the publication process.

Abbreviations

SSB	sugar-sweetened beverages
HFSS	foods high in fats, sugars and salts
WHO	World Health Organization
SDG	Sustainable Development Goal
UNGA	United Nations General Assembly
NCDs	non-communicable diseases
GNPR	Global Nutrition Policy Review
HICs	high-income countries
MICs	middle-income countries
UMICs	upper-middle-income countries
LMICs	lower-middle-income countries
LICs	low-income countries
ICN	International Conference on Nutrition

1. Introduction

The utilization of fiscal policy as a tool to promote healthier dietary patterns has emerged as a significant area of interest for policymakers and public health advocates globally. Historically, governments have primarily focused on ensuring food security by stimulating the production and distribution of affordable food, particularly staple commodities and processed products, to combat undernutrition (Mozaffarian *et al.*, 2018). However, the rising prevalence of non-communicable diseases (NCDs), such as cardiovascular diseases, type 2 diabetes, etc., has prompted a re-evaluation of traditional agricultural and food policies (Bédard *et al.*, 2020). This shift recognizes the profound impact of dietary choices on public health outcomes and the potential for fiscal measures to influence these choices by making nutritious foods more accessible and less healthy options less attractive.

The concept of **fiscal policy repurposing**,¹ which involves **modifying existing tax and subsidy schemes**, has gained traction as a strategy to encourage healthier diets and mitigate the negative health consequences associated with the overconsumption of processed foods and sugary drinks (Thow *et al.*, 2018). In essence, it entails reducing or eliminating subsidies that support the production of unhealthy food items while simultaneously introducing or expanding subsidies for the production and consumption of nutrient-dense foods like fruits, vegetables, and whole grains. Additionally, the implementation of taxes on unhealthy foods and beverages, often referred to as "sin taxes," serves as a disincentive for the consumption of these products by increasing their price (Bíró, 2015).

Evidence from country experiences over the past decade reinforces both the potential and limitations of these instruments. By early 2024, at least 115 countries had implemented a national sugary drink tax, soda tax, or sugar-sweetened beverage (SSB) tax, and dozens are taxing other unhealthy foods, aiming to discourage consumption of sugars, saturated fats, and salt. Many of these taxes have yielded reductions in sales or intake of the targeted products, with several evaluations showing significant drops in sugary drink purchases following tax implementation. At the same time, considerably smaller proportion of countries have introduced large-scale subsidies or tax waivers to make healthy foods more affordable. Politically, raising taxes on popular but unhealthy products can be more palatable (and revenue-generating) than allocating budgetary outlays for nutrition subsidies.

Studies indicate that well-designed measures can mitigate equity concerns, for instance, using tax revenues for nutrition assistance or exempting essential healthy staples can offset regressive effects and ensure benefits for vulnerable groups (Afshin *et al.*, 2017; Bíró, 2015). In practice, many existing food taxes have been implemented with tiered structures or exclusions (e.g. higher tax rates for higher sugar content, or excluding certain products), which sometimes dilute their public health impact and point to a need for greater policy coherence in design (WHO, 2015, 2018). On the subsidy side, most programmes (such as fruit and vegetable voucher schemes) to date have been small-scale or in high-income settings, with limited data on their outcomes, highlighting a gap in both implementation and evidence, especially in low- and middle-income countries (LICs and MICs).

Despite these challenges, **opportunities to expand and refine fiscal measures for healthier diets are growing.** Public support for action on nutrition is rising as awareness grows of diet-related disease costs. Major international initiatives have also given political momentum to this agenda: the 2021 United Nations Food Systems Summit spurred numerous national commitments to use measures like taxes and subsidies as "accelerators" for nutrition and sustainability, and in 2024 the G20 proposed a new Global Alliance against Hunger and Poverty that spotlights fiscal policy repurposing as a core strategy for closing diet quality gaps. Such high-level endorsements suggest a policy window for scaling up fiscal interventions.

In sum, leveraging taxes and subsidies to improve diets represents a promising and multifaceted opportunity, one that can yield health gains, reduce healthcare costs, promote equity, and foster environmental sustainability if implemented judiciously.

In light of the above, **this review aims to understand fiscal policy measures to enable healthier diets** and accelerate progress toward global health and development targets. It surveys the current landscape of diet-related fiscal policies and existing policy frameworks, synthesizes the evidence of their effectiveness and impact from recent literature, and discusses the gaps, and enabling factors in implementation.

¹ In this review, "repurposing" refers primarily to reallocating existing public support and/or recycling revenues from food taxes to fund incentives for nutrient-dense foods; it does not require net new spending, though some countries may choose to complement these reforms with additional budget allocations.

2. Methods

2.1 Mapping the policy landscape

A documentary scan approach was adopted for the mapping of the evolution, implementation scope, and breadth of the enacted fiscal measures including sugar-sweetened beverage (SSB) taxes, taxes on foods high in fat, sugar and salt (HFSS), and subsidies; that aim to influence access to healthy diets. The scan encompasses a variety of documents including:

- **Multilateral frameworks:** Documents, reports on various frameworks including 2030 Agenda for Sustainable Development, Framework for Action of the Second International Conference on Nutrition, Commission on Ending Childhood Obesity, Global Alliance against Hunger and Poverty, technical meeting reports; United Nations Decade of Action on Nutrition declaration; United Nations Food Systems Summit reports.
- **Grey literature:** Published reports, briefs, and other publications from key relevant multilateral organizations including World Health Organization (WHO), FAO, World Bank and others; as well as databases such as World Bank's Global SSB Tax Database, NOURISHING framework database, and others.
- Other relevant systematic reviews and peer reviewed studies.

2.2 Assessing policy effectiveness

To review the effectiveness of the fiscal policies on the healthy diet outcomes, a structured review approach was adopted explained below:

SEARCH STRATEGY

The search strategy included databases of PubMed, Web of Science, and the 3ie Development Evidence Portal up to 31 March 2025. Tailored strings retrieved systematic reviews or meta-analyses on (a) general fiscal measures, (b) SSB taxes, (c) HFSS taxes, and (d) healthy food subsidies. Filters limited retrieval from year 2015 to 2025. Table 1 lists the search queries used to retrieve the initial set of records with the number of records.

After title screening of each of the 360 studies, 52 were uploaded to the Coevidence² which removed the 14 duplicates, further eight studies were excluded during the abstract screening review, and one study was not accessible, leading to a total of 29 final studies used for the review of effectiveness.

² Coevidence is a web-based software platform used to support systematic reviews, including citation management, automated deduplication, and title/abstract screening.

Table 1. List of databases and search queries

Database	Query theme	Records	Search query
PubMed	General fiscal	19	((("fiscal policy"[MeSH Terms] OR fiscal policy[Title/Abstract] OR taxation[Title/Abstract] OR subsidy[Title/Abstract] OR subsidies[Title/Abstract]))AND ("diet"[MeSH Terms] OR healthy diet[Title/Abstract] OR nutrition security[Title/Abstract]) AND (systematic review[pt] OR meta-analysis[pt]))
	Sugar-sweetened beverage taxes	22	((("beverages, carbonated"[MeSH Terms] OR "sugar-sweetened beverages"[Title/Abstract] OR SSB[Title/Abstract]) AND (tax*[Title/Abstract] OR fiscal[Title/Abstract]) AND (systematic review[pt] OR meta-analysis[pt]))
	Taxes on foods high in fat, sugar and salt	4	((("food"[MeSH Terms] OR foods[Title/Abstract]) AND (high fat[Title/Abstract] OR high sugar[Title/Abstract] OR salt[Title/Abstract] OR HFSS[Title/Abstract]) AND (tax*[Title/Abstract] OR subsidy[Title/Abstract] OR fiscal[Title/Abstract]) AND (systematic review[pt] OR meta-analysis[pt]))
	Subsidies	5	((("subsidies"[MeSH Terms] OR subsidy[Title/Abstract] OR voucher[Title/Abstract] OR "cash transfer"[Title/Abstract]) AND ("fruit"[MeSH Terms] OR fruit[Title/Abstract] OR vegetables[MeSH Terms] OR vegetable*[Title/Abstract] OR legumes[Title/Abstract] OR "nutrient-dense"[Title/Abstract] OR "healthy foods"[Title/Abstract]) AND (systematic review[pt] OR meta-analysis[pt]))
3ie Portal	General fiscal	1	("food taxation" OR "junk food tax" OR "sugary drink tax") AND ("dietary outcomes" OR "nutrition" OR "healthy diets")AND ("evaluation" OR "policy impact")
Web of Science	General fiscal	89	systematic review AND (fiscal policy OR tax* OR subsidy*) AND (healthy diet OR nutrition)
	Sugar-sweetened beverage taxes	36	"sugar-sweetened beverage" OR SSB OR "carbonated beverage" OR "soft drink" AND tax* OR fiscal AND "systematic review" OR "meta analysis" AND "healthy diet"
	Taxes on foods high in fat, sugar and salt	18	food AND "high fat" OR "high sugar" OR salt OR HFSS AND tax* OR subsidy* OR fiscal AND "systematic review" OR "meta analysis" AND "healthy diet*"
	Subsidies	166	subsidies OR subsidy OR voucher OR "cash transfer" AND "fruit" OR fruit OR vegetables OR vegetable* OR legumes OR "nutrient-dense" OR "healthy foods" AND systematic review OR meta-analysis
Total identified		360	

Source: Author's own elaboration.

INCLUSION CRITERIA

- **Population:** Reviews of any human populations (all ages, genders and socioeconomic groups); global or country-specific analyses, including low-, middle- and high-income settings.
- **Intervention:** Fiscal instruments that deliberately change consumer or producer prices to improve diet quality:
 - Taxes on sugar-sweetened beverages.
 - Taxes on foods high in fat, salt or sugar.
 - Subsidies, vouchers or rebates for nutrient-dense foods (fruits, vegetables, whole grains).
 - Combined packages (e.g. simultaneous tax on unhealthy items and subsidy on healthy ones).
- **Characteristics:** Systematic reviews, meta-analyses, umbrella reviews or scoping reviews; published from the year 2015 onward, in English language.
- **Outcome:** purchases, consumption, intake, health outcomes (Body Mass Index, obesity, non-communicable disease risk markers etc.).

EXCLUSION CRITERIA

- **Population:** Animal or in vitro studies; reviews confined to clinical subpopulation (e.g. hospitalized patients, disease cohorts).
- **Intervention:** Non-price measures (labelling, marketing restrictions, education campaigns), generic agricultural subsidies not tied to healthy dietary objectives, school meals.
- **Characteristics:** Narrative reviews, commentaries, opinion pieces or policy briefs without a systematic search and selection process; protocols, editorials or conference abstracts lacking full data.
- **Outcome:** Reviews focused solely on production volumes, environmental or trade impacts without any diet or health outcomes.

Following the conceptual framing and methodological approach, the remainder of the document proceeds in three analytical sections. Section 3 provides an overview of the normative foundations and international policy discourse surrounding fiscal policy repurposing, outlining the theoretical pathways and tracing key milestones in global advocacy. Section 4 reviews the implementation landscape, analysing the scope, design features, and geographic distribution of fiscal measures. Section 5 synthesizes the empirical evidence on the effectiveness of these fiscal instruments, drawing on systematic reviews and meta-analyses to evaluate their impact on consumption patterns, nutritional outcomes, and health indicators. Collectively, these sections aim to provide a review of fiscal policy instruments as levers for enabling healthy diets.

3. Context: the case for fiscal policy repurposing

3.1 Policy rationale and international endorsement

International frameworks and guidance recommend fiscal policy repurposing as an effective tool for enabling healthy diets.

International policy frameworks, including the Rome Declaration on Nutrition, the WHO Global Action Plan for Noncommunicable Diseases, and the nutrition targets embedded in the 2030 Agenda for Sustainable Development, identify improved population diets as indispensable to global health and development (FAO and WHO, 2014; UNGA, 2015; WHO, 2013). Nevertheless, poor diet quality remains the leading contributor to the global burden of disease and drives rapid growth in obesity, diabetes, and related noncommunicable diseases across every region (Murray *et al.*, 2020; Swinburn *et al.*, 2011). These trends threaten the attainment of Sustainable Development Goal (SDG) 2 (Zero Hunger and Improved Nutrition) and SDG 3 (Good Health and Well-Being), among other goals, underscoring the urgency of policy action on food environments. Table 2 lists the key milestones in international advocacy that emphasized the fiscal policy repurposing as an effective tool for enabling healthy diets. This is sequence of commitments, reviews, and implementation plans that demonstrates a clear trajectory: from initial stock-taking (GNPR 1) through high-level political declarations, target setting and global monitoring frameworks, to the current Decade of Action, which encourages countries to scale and repurpose fiscal policies and other measures that improve diet quality and reduce diet-related NCD risk.

Fiscal policy repurposing draws its rationale from the premise that affordability represents the core barrier/incentive. Food prices relative to disposable income shape purchasing decisions; more than forty primary studies document strong price elasticities for food consumption (Andreyeva, Long and Brownell, 2010). Contemporary markets price unhealthy foods, particularly sugar-sweetened beverages and foods high in fat, salt and sugar (HFSS), lower than foods that align with dietary guidelines, leaving a healthy diet financially inaccessible for billions of people (Turner *et al.*, 2018). Fiscal regimes reinforce these differentials by directing substantial public transfers toward staple grains or cash crops and rarely toward fruits, vegetables, legumes, or nuts (FAO, UNDP and UNEP, 2021).

International guidance therefore centres on fiscal measures that alter relative prices by taxing foods and beverages high in free sugars, saturated fat, or salt and subsidizing nutrient-dense foods. The Framework for Action of the Second International Conference on Nutrition highlights economic incentives and disincentives as policy instruments that promote healthier diets (FAO and WHO, 2014). Subsequent WHO reports classify SSB as a “best buy” for preventing noncommunicable diseases and outline fiscal packages that combine taxes with subsidies (WHO, 2019, 2024a). Similar recommendations appear in the Commission on Ending Childhood Obesity report and the lancet series on adolescent nutrition, both of which emphasize fiscal measures as key levers for reducing diet-related risk among young people (Hargreaves *et al.*, 2022; WHO, 2016a). Economic and environmental analyses reinforce this emphasis. Modelling studies show that redirecting agricultural subsidies toward nutrient-dense foods can improve diet quality, lower greenhouse-gas emissions, and deliver positive welfare effects (Briggs *et al.*, 2013; Broeks *et al.*, 2020).

Table 2. Timeline of international advocacy on fiscal policy repurposing

Year	International advocacy milestone
2009–2010	World Health Organization (WHO) coordinated the first Global Nutrition Policy Review (GNPR 1), which documented national legislation and institutional capacity in 119 Member States and highlighted large implementation gaps (WHO, 2013b).
2011	The United Nations General Assembly (UNGA) adopted its first Political Declaration on the Prevention and Control of Non-communicable Diseases, placing diet-related non-communicable diseases (NCDs) on the high-level political agenda.
2014	162 Member States convened at the second International Conference on Nutrition (ICN2) and adopted the Rome Declaration on Nutrition together with a Framework for Action that lists fiscal measures among recommended policy options (FAO and WHO, 2014).
2015	The UNGA adopted the 2030 Agenda for Sustainable Development. Sustainable Development Goal (SDG) 2 commits countries to end all forms of malnutrition, while SDG 3 calls for a one-third reduction in premature NCD mortality by 2030 (UNGA, 2015).
2016	The General Assembly declared 2016–2025 the United Nations Decade of Action on Nutrition, providing a 10-year umbrella for aligning fiscal, agricultural and health policies with global nutrition and NCD targets; later extended to 2030 ³ .
2017	WHO conducted the second Global Nutrition Policy Review (GNPR 2), capturing early evidence that more countries had begun to adopt fiscal policies – taxes on unhealthy foods and subsidies for nutrient-dense foods – as part of integrated national nutrition strategies.
2021	The first United Nations Food Systems Summit generated almost 300 voluntary commitments from governments, civil-society coalitions, and the private sector, many of which reference fiscal measures – taxes, subsidies, public procurement – as accelerators for healthier and more sustainable diets. In parallel, FAO, United Nations Development Programme (UNDP) and United Nations Environment Programme (UNEP) published a global assessment showing that existing agricultural producer support is often distortive and misaligned with sustainable development objectives, and called for repurposing of harmful agricultural producer support to reverse this situation (FAO, UNDP and UNEP, 2021).
2022	The World Bank and the International Food Policy Research Institute (IFPRI) report emphasized repurposing agricultural spending toward emission-efficient technologies and land restoration as a high-return pathway for sustainable agrifood systems reform (Gautam <i>et al.</i> , 2022).
2024	Under Brazil’s G20 Presidency, governments proposed a Global Alliance against Hunger and Poverty. The Alliance’s nutrition basket lists fiscal policy repurposing – shifting subsidies toward nutrient-dense foods and taxing unhealthy options – as a core instrument to close diet-quality gaps, especially among vulnerable groups.

Sources: Author’s own elaboration based on WHO. 2013b. *Global nutrition policy review: what does it take to scale up nutrition action?* Geneva, Switzerland. <https://iris.who.int/handle/10665/84408>; FAO & WHO. 2014. *Second International Conference on Nutrition (ICN2): Rome Declaration on Nutrition & Framework for Action*. Rome. <https://openknowledge.fao.org/handle/20.500.14283/ml542e>; UNGA. 2015. *Transforming our world: the 2030 Agenda for Sustainable Development*. <https://sdgs.un.org/sites/default/files/publications/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>; FAO, UNDP & UNEP. 2021. *A multi-billion-dollar opportunity – Repurposing agricultural support to transform food systems*. Rome. <https://doi.org/10.4060/cb6562en>; Gautam, M., Laborde, D., Mamun, A., Piñeiro, V., Martin, W. & Vos, R. 2022. *Repurposing Agricultural Policies and Support*. Washington, DC, World Bank and IFPRI. <https://doi.org/10.1596/36875>

³ United Nations Decade of Action on Nutrition (2016–2025) extended to 2030.

Reflecting the convergence of nutrition and sustainability objectives, Brazil's 2024 G20 Presidency proposed a Global Alliance against Hunger and Poverty whose nutrition policy basket lists fiscal policy repurposing as one of the instruments for widening access to healthy diets (Global Alliance Against Hunger and Poverty, 2025). The policy groups listed under the fiscal policy repurposing instrument includes:

- **Production or consumption incentives:** subsidies, tax credits, or vouchers toward producers, retailers, or consumers to expand the supply of and reduce prices for nutrient-dense foods such as fruits and vegetables.
- **Taxing unhealthy foods:** excise or ad valorem taxes on sugar-sweetened beverages and unhealthy foods that are high in fat, sugar, or salt to curb consumption.

The fiscal policy instrument through these two policy groups includes several tools that are part of governments current policies and/or advocated by different international recommendations and guidelines. These include:

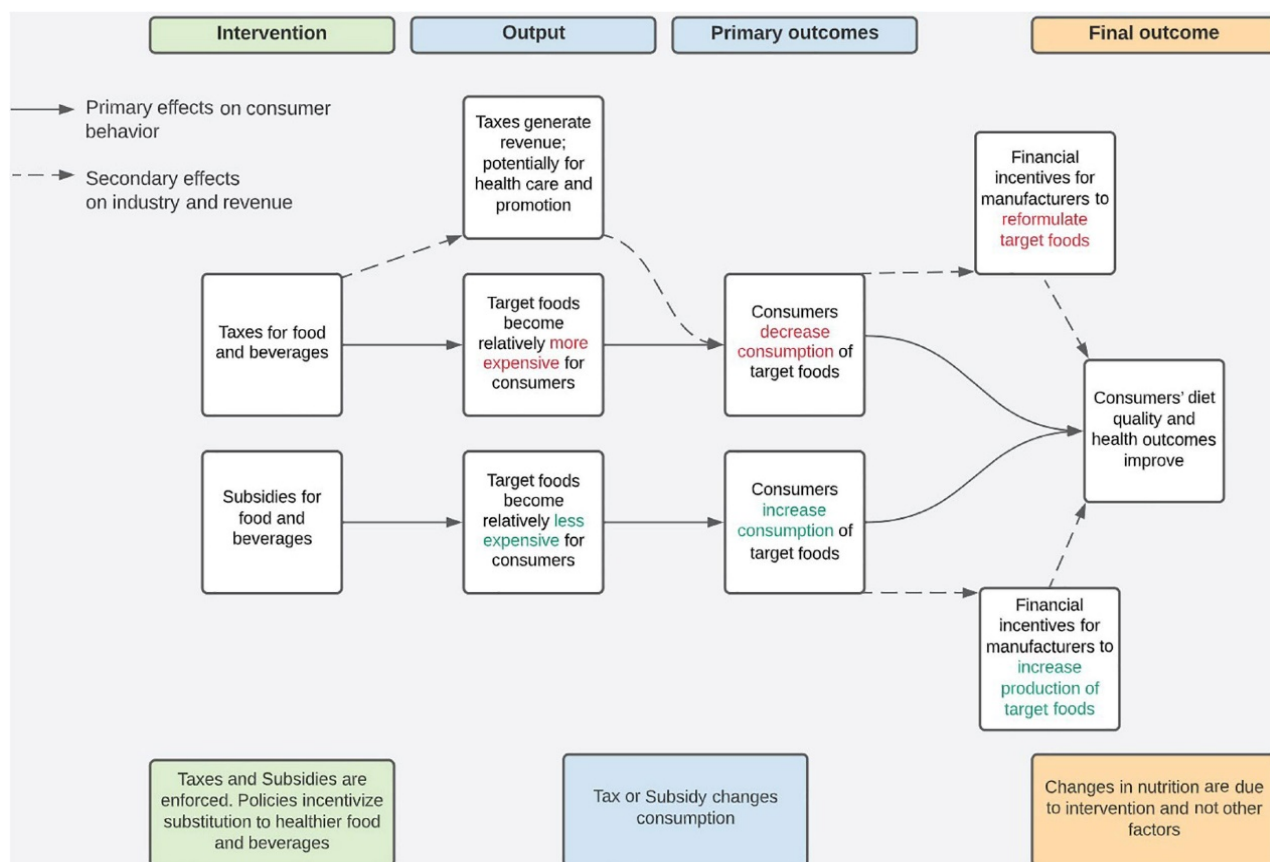
- taxes on sugar-sweetened beverages
- taxes on foods high in fats, salts, and sugars
- withdrawing taxes on healthy foods
- subsidies for nutrient-dense foods
- withdrawing subsidies or support for unhealthy foods.

3.2 Pathways to healthy diets: how do fiscal policies enable healthy diets?

Fiscal policies connect with healthy diets through prices and provide additional sources of revenue for the governments.

The WHO technical meeting on fiscal policies for diet and non-communicable disease prevention and a subsequent systematic review describe a common theory of change that connects taxes and subsidies to dietary and health outcomes (Hammaker *et al.*, 2022; WHO, 2016b) as illustrated by Figure 1, extracted from (Hammaker *et al.*, 2022).

Figure 1. Fiscal policy repurposing theory of change



Source: Hammaker, J., Anda, D., Kozakiewicz, T., Bachina, V., Berretta, M., Shisler, S. & Lane, C. 2022. Systematic review on fiscal policy interventions in nutrition. *Frontiers in Nutrition*, 9: 967494. <https://doi.org/10.3389/fnut.2022.967494>

It argues that policymakers launch fiscal instruments, excise or ad valorem taxes on sugar-sweetened beverages and HFSS; as well as subsidies or vouchers that reduce the shelf price of fruits, vegetables, legumes and nuts, to alter both availability and accessibility. The immediate transmission channel runs through prices: higher prices for taxed products and lower prices for subsidized products shift relative costs at the point of purchase. It is important to note that the magnitude of this price change depends on tax pass-through rates, i.e. the extent to which producers and retailers pass the tax onto consumers rather than absorbing it in margins. Where pass-through is high, retail prices rise more fully and the expected reductions in purchases and intake of taxed products are stronger.

Consumers react along well documented price elasticities. Purchases and intake of taxed products fall, especially among groups with lower incomes, adolescents, and individuals with high baseline consumption; purchases of subsidized items rise in response to lower prices. The aggregate change in demand feeds back to suppliers. Declining sales of taxed items reduce production volumes or spur manufacturers to reformulate products, so they qualify for lower tax rates. Conversely, sustained growth in demand for subsidized products encourages producers and retailers to expand supply chains for nutrient-dense foods.

Fiscal measures also create a revenue stream. Governments may earmark these funds for public procurement, nutrition education, school feeding, or other health promotion programmes, reinforcing the primary dietary objectives and widening the reach of the intervention. Through the combined demand, supply and revenue channels, fiscal policy repurposing improves overall diet quality and, over time, contributes to better health and wellbeing outcomes in the population.

4. Implementation of fiscal policies

Taxation measures are primarily focused on SSBs; subsidies lack clear focus on healthy diets.

Modern **taxation** of unhealthy foods and beverages traces its origins to the 1920s–30s, when governments introduced so-called “luxury taxes” on carbonated drinks and chocolate solely to raise revenue, without any public-health rationale. Health-oriented fiscal measures emerged after 2011, with SSBs the most commonly taxed category, followed by non-SSBs, energy drinks and fruit juices (WHO, 2018). Policymakers typically define taxable goods by sugar-content thresholds, and sometimes by energy density, but many exclude 100 percent fruit juices and flavoured milk drinks from their scope. Others tax only on added sugars, neglecting free sugars released during juicing (WHO, 2018). These exemptions conflict with recommendations on total sugar intake for adults and children, since fruit juices and sweetened milk products often match or exceed the sugar and calorie levels of taxed SSBs (WHO, 2015).

On the other hand, **subsidies** for food items first appeared in the 1960s, when a handful of countries began lowering consumer prices on core staples and perishable goods (WHO, 2018). Historical records detail support for milk; staple grains such as bread, pasta and rice; cereals; dairy products including yoghurt and cheese; edible oils; fresh meats; and a variety of fruits and vegetables. These early incentive schemes aimed to improve household access to key food groups, although their scope, objective, and targeting varied markedly across contexts (WHO, 2018).

4.1 Current landscape of fiscal policy implementation

More countries tax SSBs, some tax HFSS, and very few provide subsidies.

In terms of implementation of fiscal policies, WHO (2024b) finds that, as of February 2024, 115 countries impose a national tax on SSB and 41 extend similar taxes to other unhealthy food categories. By contrast, just nine countries subsidize healthy foods at the national level, six have removed existing taxes on healthier products, and four have withdrawn subsidies on less healthy items.

These numbers emerge from policy submissions by 162 countries during the WHO Global Nutrition Policy Review 2016–2017. The marked imbalance, widespread adoption of taxes alongside limited subsidies, suggests that governments prioritize revenue-generating measures. In many settings, taxes on unhealthy products present a more politically and administratively tractable option than sustained subsidy programmes to support healthier diets.

TAXES ON SUGAR-SWEETENED BEVERAGES

Over 100 countries implement taxes on SSBs, majority in low- and lower-middle-income countries, with excise tax as the most preferred instrument.

Governments most frequently target SSB to advance healthy-diet objectives; these taxes typically apply to a diverse range of products, including:

- **Carbonated soft drinks:** Beverages carbonated with carbon dioxide and sweetened with added sugars (e.g. colas, lemon-lime sodas, flavoured fizzy drinks).
- **Energy drinks:** Non-carbonated or lightly carbonated beverages containing high levels of added sugars and stimulants (e.g. caffeine, taurine).
- **Fruit-flavoured drinks and juices:** Ready-to-drink beverages made from fruit concentrate or juice with added sugars, including cordials and nectars; excludes 100 percent unsweetened juice.
- **Powdered or liquid concentrates:** Sugar-sweetened powders or syrups intended for reconstitution (e.g. powdered fruit drinks, cordials, squash).
- **Sweetened milk-based beverages:** Dairy or plant-based milks fortified or flavoured with added sugars (e.g. chocolate milk, flavoured lassis, sweetened soy or almond milk).

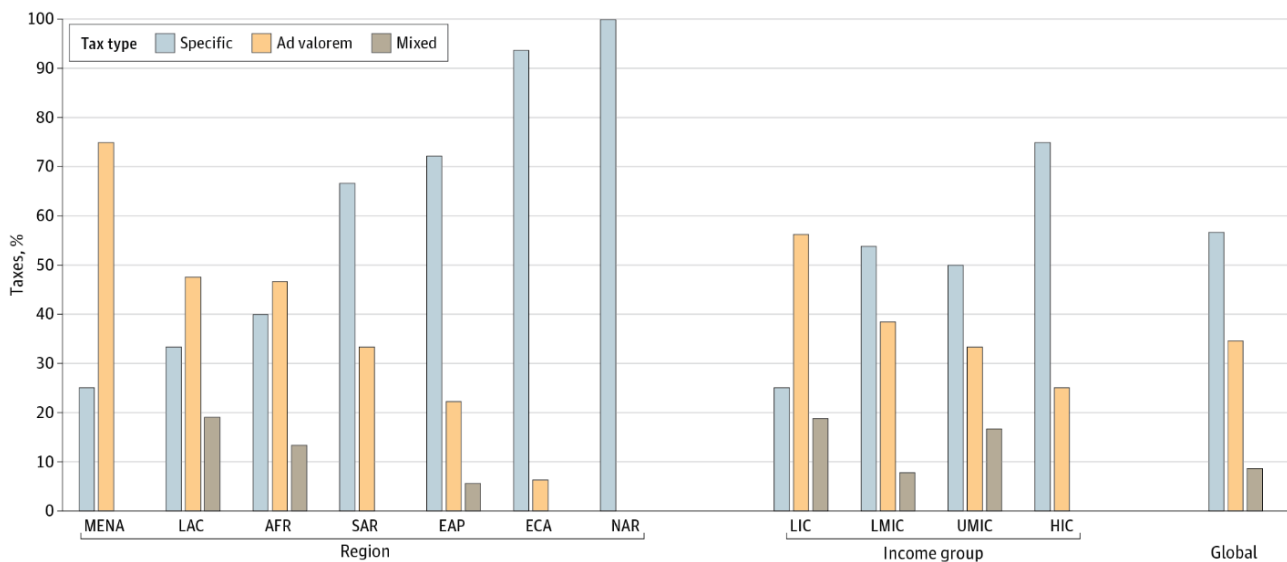
- **Sports and electrolyte drinks:** Beverages formulated with added sugars and electrolytes for rehydration (e.g. isotonic, hypotonic sports drinks).

World Bank (2023) database provides greater depth of insights into the implementation landscape of taxes on these SSBs. As of February 2023, it documents 121 active SSB taxes worldwide, of which 106 operate at the national level, together covering roughly 52 percent of the global population. Tax coverage skews toward LICs and lower-middle income countries (LMICs): 66 percent of people in LICs and 74 percent in LMICs live under a national SSB tax, compared with just 30 percent in high-income countries (HICs) and 29 percent in upper-middle-income countries (UMICs).

All SSB taxes target carbonated soft drinks and energy drinks, and 71 percent extend to powder or liquid concentrates used to prepare SSBs. A substantial share also encompasses unsweetened fruit juices (34 percent) and sweetened milk-based beverages (45 percent), with these broader bases more prevalent in LMICs. Surprisingly, 28 percent of SSB taxes worldwide apply to unsweetened bottled water, a practice most common in LICs, where it affects over half of all SSB taxes.

A systematic review by Hattersley and Mandeville (2023) further maps regional adoption of these measures' penetration and design features. SSB taxes reach almost the entire population of South Asia (98 percent), Latin America and the Caribbean (81 percent), and sub-Saharan Africa (80 percent), but fall to 39 percent in Europe and Central Asia, 24 percent in the Middle East and North Africa, and just 10 percent in East Asia and the Pacific. The most prominent tax instrument is the excise taxes (104 of 118; 88 percent), reflecting their precision in raising prices on targeted products. Of these excise taxes, 57 percent are specific taxes (fixed amount per unit or volume), 35 percent are ad valorem (percentage of a product's value), and 9 percent combine both approaches. High-income countries favour specific excise taxes (75 percent of their excise regimes), whereas LMICs more often adopt ad valorem or mixed structures (55 percent of their excise regimes). Figure 2 shows the tax structure by region and income group, and the Annex 1 lists the national and subnational taxes for each country along with the date of introduction/revision, and structure and base of the taxes.

Figure 2. Sugar-sweetened beverages excise tax structures by region and income group



Notes: MENA = Middle East and North Africa; LAC = Latin America and the Caribbean; AFR = Africa (mainly sub-Saharan Africa); SAR = South Asia; EAP = East Asia and the Pacific; ECA = Europe and Central Asia; NAR = North America; LIC = low-income countries; LMIC = lower-middle-income countries; UMIC = upper-middle-income countries; HIC = high-income countries.

Source: Hattersley, L. & Mandeville, K.L. 2023. Global Coverage and Design of Sugar-Sweetened Beverage Taxes. *JAMA Network Open*, 6(3): e231412. <https://doi.org/10.1001/jamanetworkopen.2023.1412>

TAXES ON UNHEALTHY FOODS

Far fewer countries have enacted fiscal measures to disincentivize unhealthy foods.

In addition to SSBs, the other foods that are usually taxed to support healthy diets are categorized as foods high in fat, salt and sugar (HFSS) excluding beverages. These foods include:

- **Energy-dense snacks:** Industrially processed items made from extracted fats, starches, or sugars, often with additives; for example: frozen meals, soft drinks, hot dogs, packaged biscuits, cakes and salty snacks.
- **Confectionery:** Sugar-rich treats such as chocolates and pre-packaged sweets.
- **Bakery items:** Flour-based products like biscuits, buns, rolls, pastries and similar baked goods.
- **High-fat foods:** Products with elevated fat content, including meats, dairy (butter, cheese, cream, sour cream), margarine, edible oils and snack foods (chips, cookies, biscuits).

In contrast with SBBs, far fewer countries have adopted fiscal measures as disincentives on foods high in fat, salt and sugar, and the evidence on their design and impact remains sparse. WHO (2022) report that the number of countries with national taxes on HFSS products rose from 7 in 2017 to 12 by 2019 and by 2022, 29 countries had enacted such taxes at the national level.

A recent systematic review by Pineda *et al.* (2024) identifies eighteen countries that have taxed various HFSS categories over the past few decades, deploying different approaches and targeting distinct products. Table A3 summarizes the range of HFSS fiscal measures, their tax bases and the taxation models employed across different countries. Table A3 shows that most HFSS taxes take the form of excise taxes or import levies at the point of manufacture or entry. In 14 of the 19 jurisdictions reviewed, governments impose either specific excises, fixed amounts per weight or volume (as in Finland's EUR 0.95 per kilogram on confectionery and Hungary's Ft 130 per kilogram on high-sugar foods) or ad valorem excises, calculated as a percentage of value. Small island and lower income economies frequently rely on ad valorem import duties e.g. Bermuda's duty on sugar confectionery rose from 50 percent to 75 percent between 2018 and 2019, while Samoa applies a 100 percent levy to imported turkey tails.

It further demonstrates that almost all schemes use a single, uniform rate across their taxable categories. Only Canada and French Polynesia have implemented tiered structures; Canada differentiates between 10 percent and 20 percent duties on salty snacks, and French Polynesia scales its excise from CFPF 20 to CFPF 85 per kilogram based on sugar content. Moreover, few rates exceed the 20 percent threshold that WHO guidance suggests is necessary to achieve meaningful consumption declines (WHO, 2024a).

Moreover, tax bases range from narrowly targeted to broadly inclusive. Dominica's 10 percent excise covers only sweets and chocolate bars, whereas Bermuda's expanded 2019 regime captures all foods with added sugars, and Mexico's 8 percent ad valorem tax applies to any non-essential food exceeding 275 kilocalories per 100 grams. High-income countries tend to favour specific, nutrient-aligned excises; middle-income nations like Mexico opt for simpler uniform ad valorem taxes; and low-income or island states depend on import duties. These patterns mirror differences in administrative capacity, fiscal infrastructure, and public-health priorities across regions.

SUBSIDIES TO ENABLE HEALTHY DIETS

Available evidence suggests high concentration of subsidies in high-income countries. Subsidies remain a strikingly underutilized instrument as compared with revenue raising tax measures.

Subsidies offer a fiscal policy measure to reallocate existing agricultural support through shifting production support away from staple crops towards fruits, vegetables, legumes, and other nutrient-dense foods. On the consumption side, it provides price incentives to consumers, including rebates, discounts, vouchers, or coupons) targeted at low-income and vulnerable groups to expand purchasing power for safe, nutritious options. Several countries implement food subsidies to improve nutritional outcomes by expanding access to healthy foods, particularly among low-income populations. However, as with the HFSS, the data, evidence, and availability of coverage and design of this policy instrument remain scarce.

A report based on 2019 global survey on assessing national capacity for the prevention and control of NCDs (WHO, 2020) notes that of the 194 WHO member states, the region of South East Asia leads with 18 percent countries self-reported presence of subsidies for healthy foods followed by the Eastern Mediterranean (10 percent), Western Pacific (7 percent), Africa (6 percent), and Americas (7 percent). However, the details of the subsidy programmes are not available and the inclusion of these, thus, cannot be evaluated.

However, a more recent rapid literature review by the World Bank (Mansilla and Herrera, 2023) focused on the review of evaluation studies, provides deeper insights into 20 identified subsidy programmes in place globally. It reports that there is a heavy concentration of initiatives in the United States of America, which accounts for 60 percent of identified schemes, while large emerging economies such as India display only nascent efforts and middle- and low-income countries remain largely absent. These programmes use different approaches including tax reductions on fruits and vegetables, consumer vouchers and cash-back rebates, and discounts; but they share a common reliance on price discounts delivered through paper or electronic mechanisms and loyalty/gift cards. Of these 20 programmes, 16 were reported to be targeted towards specific vulnerable populations, 15 targeted to fruits and vegetables, and 3 to other healthy foods. Table 3 lists these programmes with the main mechanism and delivery channels as provided by the review.

Table 3. List of subsidy programmes

Country	Number of programmes	Main mechanisms (% of total programmes)	Delivery channels
United States of America	12	Vouchers to produce discounts (30%) Cash-back rebates (25%) Vouchers to purchase (20%) Other (15%) Discounts (5%)	Paper vouchers/coupons, Loyalty/gift cards, Point-of-sale discounts
India	2	Other (distribution-charge reforms on pulse flour)	Market price adjustments
Canada	1	Paper-based vouchers to purchase	Paper vouchers
Australia	1	Cash-back rebates	Loyalty/gift cards
United Kingdom of Great Britain and Northern Ireland	1	Cash-back rebates	Loyalty/gift cards
South Africa	1	Cash-back rebates	Loyalty/gift cards
Norway	1	“Free fruit” daily provision	School distribution
Latvia	1	VAT reduction on fruits and vegetables	Tax administration

Notes: The subsidy programmes summarized in this table refer mainly to targeted, nutrition-oriented subsidies designed to increase access to healthy foods, especially fruits and vegetables (which account for most programmes in the review). The review does not primarily cover broad staple subsidy or general food security schemes; however, it does include a small number of India cases implemented through the public distribution system, involving pulses (and subsidized flour made from pulses) and subsidized wheat flour, which are closer to staple-/distribution-system interventions.

Source: Mansilla, C. & Herrera, C.A. 2023. Food subsidies to promote healthy eating and reduce food prices: a rapid literature review. *World Bank Discussion Paper*.

Moreover, the focus of the available literature is exclusively on consumption side initiatives ignoring the supply side measures such as reallocating agricultural subsidies towards nutrient-dense crops. FAO's *The State of Food Security and Nutrition in the World 2022* (FAO, 2022) provides a thorough breakdown of agricultural support through public transfers to farmers, detailing input subsidies, price supports, and market interventions across staple grains and other commodity groups. However, these analyses focus on aggregate agricultural support and do not distinguish initiatives explicitly designed to improve healthy-diet outcomes (for example, subsidies targeted at fruits, vegetables, or other nutrient-dense foods).

4.2 Government priorities as reflected in support to agricultural sector

Government support disproportionately favours staple sufficiency over dietary diversity or nutrient adequacy.

The insights into the structure of global agricultural support in the (FAO, 2022) report reveals the general tendencies in government support to agriculture, which may not be conducive to making the healthy diet accessible and affordable. The report notes that the governments channel roughly USD 630 billion annually into agricultural support, predominantly to staples, dairy and animal-source proteins, signalling a clear priority on caloric sufficiency and farm income stabilization. Rice, sugar, and various meats receive the lion's share of subsidies and price supports, while fruits and vegetables attract minimal or even negative incentives in some low-income settings. This allocation pattern underscores a longstanding focus on food security, defined primarily as adequate staple production, over dietary diversity, or nutrient adequacy.

Border measures and market-price controls reinforce this bias. Tariffs and import duties on horticultural products often act as non-tariff barriers that limit the availability and raise the cost of nutritious foods, even as they protect domestic staple markets. Similarly, administered price floors for wheat, maize and sugar, designed to stabilize farm incomes and guarantee staple supplies, implicitly discourage producers from shifting toward fruits, vegetables or pulses, which receive neither equivalent supports nor guaranteed pricing (FAO, 2022). The human cost of this trade-off emerges starkly in affordability data: nearly 3.1 billion people could not afford a healthy diet in 2020, an increase of 112 million from the previous year, driven largely by Asia and Africa (FAO, 2022).

4.3 Key takeaways: gaps in implementation of fiscal policies for healthy diets

The fiscal landscape reveals a clear preference for corrective taxes over positive incentives.

Since the early "luxury" levies of the 1920s, governments have increasingly turned to sugar-sweetened-beverage taxes, now adopted by over half of the countries to curb unhealthy consumption and generate revenue (WHO, 2018, 2024b). In contrast, less than 5 percent of the countries deploy subsidies to lower prices of nutrient-dense foods, and even fewer have rescinded taxes or subsidies on HFSS products. This imbalance likely reflects the relative political ease and budgetary appeal of revenue-raising measures versus the fiscal outlays and targeting complexity inherent in subsidy programmes.

Design features further undermine policy coherence. Tax bases often exclude 100 percent fruit juices and flavoured milks or centre solely on added-sugar thresholds, despite WHO guidelines on free-sugar intake and evidence that these drinks contribute comparably to diet-related risk (WHO, 2015, 2018). Similarly, the predominance of uniform excise structures, specific or ad valorem, ignores more nuanced tiered rates that could better align price signals with fat, sugar, or salt content. On the subsidy side, programmes concentrate on high-income settings, largely as consumer vouchers or point-of-sale discounts, and lack transparent data on coverage, subsidy rates and nutrition outcomes (Mansilla and Herrera, 2023).

On the supply side, **this tax-subsidy imbalance compounds a broader bias in agricultural support**: nearly USD 630 billion per year flows to staples, dairy and meat, reinforcing price disincentives for fruits, vegetables and pulses and constraining healthy-diet outcomes (FAO, 2022).

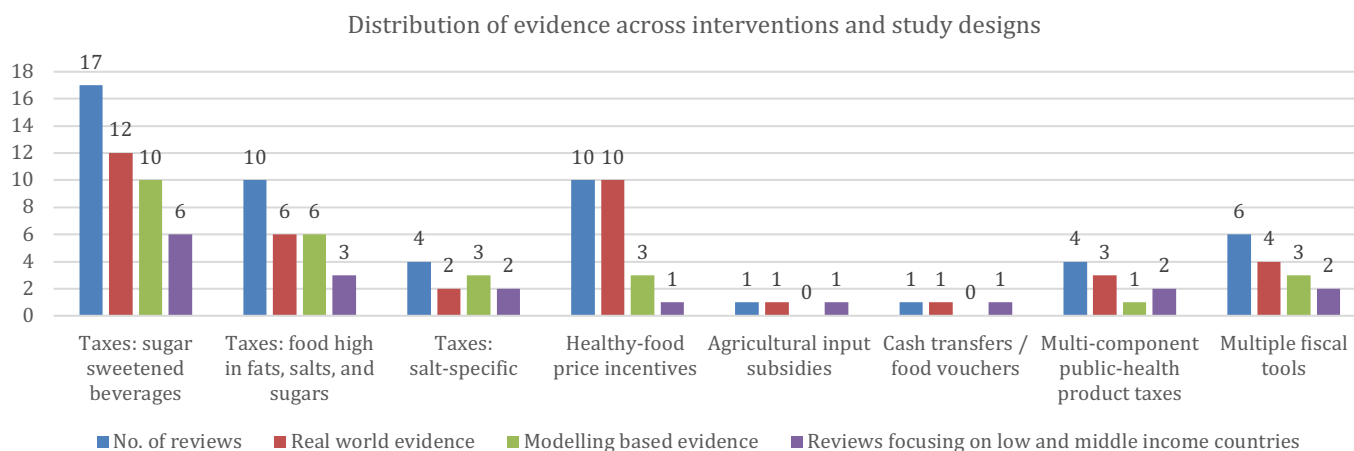
5. Effectiveness of fiscal policies for healthy diets

As discussed earlier, the fiscal measures of taxes and subsidies are increasingly employed to influence food and beverage consumption for healthy diets as they alter the most immediate determinant of choice: relative price. Over the last two decades, governments have instituted different fiscal measures, e.g. excise taxes on sugar-sweetened beverages, ad-valorem levies on energy-dense snacks, cash-value vouchers for fruits and vegetables etc. for the objective of enabling healthy diets. Evaluating the effectiveness of these fiscal tools is therefore central to understanding how these price-altering interventions influence the desired outcomes.

5.1 Evidence summary

The evidence base compiled for this review is both extensive and heterogeneous. Twenty-nine systematic or umbrella reviews published between 2015 and 2025 collectively cover around 900 primary evaluations and simulation studies, not excluding duplicates. The assembled evidence predominantly evaluates consumer-facing measures, including SSB taxes, HFSS taxes, salt-specific taxes, and subsidies for healthier food options, such as for the consumption of fruits and vegetables. Although empirical data originate largely from high income and upper-middle income countries, especially Mexico, the United States of America, and selected European jurisdictions, seven reviews incorporate modelling to explore potential effects in lower income settings. Outcomes most frequently reported include changes in retail prices, household purchases, and dietary intake; fewer studies track anthropometric or metabolic endpoints, and still fewer disaggregate results by socioeconomic or demographic subgroups. Together, these reviews provide a broad but uneven picture of how fiscal policy measures operate across contexts, populations, and time scales. Figure 3 summarizes the number of studies by type of interventions and study designs.

Figure 3. Distribution of evidence across interventions and study designs



Source: Authors' own elaboration.

Taxes on SSBs is the most widely evaluated intervention among the reviewed studies.

Sugar-sweetened beverages taxation emerges as the most extensively studied intervention, covered in over half (17 out of 29) of the reviews, primarily from HICs and UMICs contexts (e.g. Finland, France, Hungary, Mexico, Spain, United States of America), as seen in reviews by (Redondo, Hernández-Aguado and Lumbreras, 2018; Teng *et al.*, 2019). Conversely, evidence for HFSS food taxes and salt-specific taxes, while promising in modelling studies e.g. Dodd *et al.* (2020), remains limited in empirical evaluations, particularly from lower-income settings, with notable exceptions like Pineda *et al.* (2024b).

Evidence on subsidies is largely concentrated in high-income countries.

Healthy-food subsidies and incentives have a relatively strong empirical foundation from United States of America federal nutrition programmes (e.g. supplemental nutrition assistance programme [SNAP], special supplemental

nutrition programme for women, infants, and children [WIC]). These evaluations consistently demonstrate improvements in fruits and vegetable consumption/purchasing and reductions in food insecurity, as documented in Stein *et al.* (2025) and Zhang *et al.* (2020). However, generalizability outside high-income contexts is uncertain, because empirical evaluations outside high income settings are scarce. Agricultural input subsidies is confined primarily to small-scale observational studies in two African countries (Gambia, Malawi), underscoring a critical gap in understanding the potential dietary impacts of upstream or production-side fiscal measures, as noted by (Walls *et al.*, 2018).

Key gaps: A clear imbalance emerges in both geographic representation and methodological rigour. Evidence across all interventions is disproportionately sourced from HICs and UMICs, notably North America and Europe, leaving a significant knowledge gap in LMICs where the burden of diet-related NCDs is rapidly escalating. Additionally, the reliance on modelling studies or experimental simulations, such as supermarket-based controlled trials, provides important insights but introduces considerable uncertainty. These typically rely on strong assumptions of uniform price pass-through, consumer responsiveness, and absence of substitution effects.

In summary, this synthesis underscores the strength and breadth of evidence supporting fiscal measures, especially SSB taxes, in altering consumer behaviours in high-resource contexts. Nevertheless, critical evidence gaps persist in evaluating the impacts of HFSS and salt-specific taxes, the effectiveness of agricultural subsidies, and the scalability of healthy-food incentives in LMICs. Addressing these gaps through rigorous, longitudinal, and contextually diversified empirical evaluations is imperative for informing effective, equitable, and context-appropriate policy implementation globally.

5.2 Review of the impact of fiscal policies

TAXES ON SUGAR-SWEETENED BEVERAGES

Evidence from recent systematic reviews converges on a clear price–response relationship. Meta-analyses pooling results from primary evaluations estimate that every 10 percent increase in retail price reduces sugar-sweetened-beverage purchases or intake by roughly 7–15 percent, with pooled own-price elasticities ranging from -1.0 to -1.6 (Afshin *et al.*, 2017; Andreyeva *et al.*, 2022a; Barry *et al.*, 2023). At the upper end of the tax spectrum, a 50 percent ad valorem duty in Saudi Arabia lowered carbonated-drink sales by -2.5 standardized effect estimate (Hammaker *et al.*, 2022), while national excises set at 20 percent in South Africa and Australia produced double-digit consumption declines and energy-intake reductions of 16–36 kJ per day (Falsafi *et al.*, 2024; Itria *et al.*, 2021). These findings are consistent with Hyseni *et al.* (2017) covering studies that suggest that larger taxes (≥ 20 percent) generate proportionately larger changes.

Design features appear to modulate effect size. In Mexico, the 1-peso-per-litre excise (about a 10 percent price rise) is linked to a 7.6 percent drop in purchases, with modelling suggesting larger reductions under 10–20 percent tax scenarios (Falsafi *et al.*, 2024). In South Africa, a 20 percent sugar-content tax is estimated to reduce energy intake from SSBs by around 36 kJ per person per day (Falsafi *et al.*, 2024; Itria *et al.*, 2021). Pass-through rates reported in global syntheses exceed 80 percent, indicating that tax burdens translate largely into shelf-price increases rather than being absorbed by manufacturers or retailers.

Evidence on downstream health outcomes, although less abundant, points in the same direction. Studies forecast **BMI reductions** of $0.15 \text{ Kg/m}^2 \pm 0.55$ for a 10 percent tax rate with a monthly peak reach of 0.29 percent ± 0.01 , and doubles for a 20 percent tax rate and **obesity prevalence declines** of 1.3–2.4 percent under 10 percent tax scenario (Firdaus, Andarwulan and Hariyadi, 2024). Analysis in Hungary associate the SSB levy with **lower adult overweight** ($\beta = -0.23$) and diabetes prevalence ($\beta = -0.54$), while child-focused evaluations in Samoa, Tonga and El Salvador document **significant reductions in obesity risk** after amount-specific or ad valorem duties (Sassano *et al.*, 2024).

Substitution patterns vary. Reviews note that reductions in SSB purchases are sometimes accompanied by increases in other untaxed beverages. In Mexico, evaluations summarised in Falsafi *et al.* (2024) show modest shifts toward bottled water and some dairy beverages, while modelling studies for India indicate potential substitution toward tea or milk under higher SSB tax scenarios (Itria *et al.*, 2021). **These patterns suggest that the overall nutritional effect of taxation depends on the availability and relative prices of alternative drinks.**

Taken together, the systematic-review evidence indicates that SSB taxes reliably depress purchases and intake in proportion to their magnitude, with the strongest effects observed for taxes at or above the 20 percent threshold and for tiered designs tied to sugar content. Demonstrated energy-intake reductions translate, in modelling studies, into meaningful obesity and diabetes benefits, although empirical confirmation of long-term health gains remains limited and geographically uneven. Heterogeneity across settings highlights the roles of tax design, complementary policies and market context in determining ultimate health impact. Table A4 summarizes the evidence on effect of SSB taxes as reported in selected studies.

TAXES ON FOODS HIGH IN FAT, SALT AND SUGAR

Effect of fiscal policy: impact of taxes on foods high in fat, salt and sugar. Evidence on HFSS taxes remains sparse relative to SSB levies, but results from recent systematic reviews point to following broad findings.

Price signals translate into modest but measurable gains. Specific, nutrient based duties generate the clearest dietary shifts. Denmark's fat tax of Dkr 14 kg⁻¹ reduced saturated fat purchases by 7.4 percent (Hyseni *et al.*, 2017), while Hungary's PHPT, ranging from 100 to 500 Ft kg⁻¹ on confectionery, lowered intake of taxed items by roughly 3 percent and cut sales 6–12 percent (Pineda *et al.*, 2024). Salt focused review covers evidence that suggest that a 20 percent tax on products high in salt predicted to reduce monthly household salt purchases by 10percent in the United States of America and 11 percent in New Zealand. In contrast, a tax of \$A 0.3/g of excess salt was predicted to reduce salt intake by 67 mg/d in Australia (percentage decline not provided) (Dodd *et al.*, 2020).

Low rate taxes yield smaller behavioural change; and substitution can occur. Global evidence suggest that modest taxes on unhealthy foods can produce small but meaningful improvements in dietary intake. According to Afshin *et al.* (2017), a 10 percent price increase on energy-dense products typically leads to an 8–10 percent reduction in consumption, with proportional declines in energy, sugar and saturated-fat intake. Reviews also highlight the importance of tax design. Dodd *et al.* (2020) report that Hungary's public health product tax prompted reformulation, reduced purchases, and some substitution toward cheaper or untaxed alternatives, illustrating the risk that narrow tax bases or low rates may dilute health impacts. These findings underscore that broad coverage and adequately high rates are needed to minimize substitution and strengthen downstream dietary improvements. Further, evaluations in Tonga and Hungary also document brand switching or migration toward untaxed local alternatives, signalling that broad coverage and higher rates are needed to minimize substitution.

Only a handful of reviews translate nutrient changes into morbidity outcomes. Only a handful of reviews translate nutrient intake changes into projected morbidity or mortality outcomes. Among the exceptions, modelling from Australia estimated that implementing a salt levy of \$A 0.30 per gram of sodium above target levels in processed foods could avert approximately 130 000 disability-adjusted life years (DALYs) across the population by reducing average salt intake by 67 mg/day. In the United Kingdom of Great Britain and Northern Ireland, salt reduction scenarios projected 2 100–2 500 deaths avoided annually, depending on the specific policy design and level of sodium reduction achieved (Dodd *et al.*, 2020). These findings underscore the potential public health benefits of fiscal policies targeting high-sodium foods, although the evidence remains limited in scope and largely based on modelled, rather than observed, health outcomes.

Design and context matter. Taxes expressed per unit of harmful nutrient, Denmark's kroner per gram of saturated fat or Australia's modelled excise per gram of excess salt, appear to generate stronger dietary response as compared to modest and broad uniform ad valorem rates of 8–10 percent (Afshin *et al.*, 2017; Dodd *et al.*, 2020; Niebylski *et al.*, 2015; Redondo, Hernández-Aguado and Lumbreras, 2018; Teng *et al.*, 2019).

Equity considerations remain underexamined in the implementation and evaluation of such studies. While price altering policies show promise in improving desired outcomes, most reviews note that very few studies assess whether these benefits are distributed fairly across different socioeconomic or demographic groups (Backholer *et al.*, 2016; Gittelsohn, Trude and Kim, 2017; Pineda *et al.*, 2024; Walls *et al.*, 2018). As a result, there is limited understanding of how interventions affect low-income populations, rural communities, or other marginalized groups, and whether they unintentionally widen disparities. Addressing these gaps requires more targeted research that examines differential impacts and explores mechanisms that can ensure policies promote both effectiveness and fairness.

Overall, the existing systematic review literature suggests that HFSS taxes can deliver small to moderate reductions in harmful nutrient intake, especially when rates are sufficiently high, often in the range meeting or exceeding 15–20 percent and when taxes are tied directly to nutrient content. Annex Table A5 summarizes the effects as reported in the studies.

SUBSIDIES FOR HEALTHY FOODS

Effect of fiscal policy: impact of subsidies for nutrient-dense foods. The systematic review evidence, though narrower in frequency than that for SSB taxation, shows a consistent, positive relationship between price discounts on fruits, vegetables and other nutrient-dense foods and consumer uptake.

Magnitude of response. Meta-analyses pooling data from multiple high-income settings estimate that a 10 percent price reduction increases sales or intake of targeted foods by 6–14 percent. Andreyeva *et al.* (2022b) report a price elasticity of –0.59 for fruit and vegetable sales, while (Afshin *et al.*, 2017) observe a 14 percent rise in fruit and vegetable consumption across diverse countries for the 10 percent price reduction. Hyseni *et al.* (2017) reports study that suggest 10 and 25 percent discounts raise daily intake of fruits and vegetables by 0.38 and 0.64 servings respectively.

Delivery mechanisms. Evidence suggests a dose-response gradient. Modest 10 percent discounts shift consumption by single-digit percentages, whereas more generous vouchers or sustained weekly credits can lead to substantially higher intake. For example, one study summarized by Hyseni *et al.* (2017) found that providing a subsidy of USD 10 per week in vouchers to purchase fruit and vegetable for six months led to a significantly higher intake in intervention groups compared with the control group (7.8 vs 4.8 servings per day). Six additional months after the intervention ended, this increase was sustained (7.5 vs 4.9 servings per day).

Equity and targeting. The consumption of fruits and vegetables is found to be more responsive to price changes in LICs, a 10 percent increase in prices leads to 7.2 percent decrease in consumption; as compared to MICs (6.5 percent) and HICs (5.3 percent) (Wolfenden *et al.*, 2021).

Moreover, Zhang *et al.* (2020) reviews studies that argues that higher availability and accessibility of FVs can be associated with improved FV consumption among low-income preschoolers in general. For instance, revisions to the WIC food package that added USD 6–10 per month for fruits and vegetables tripled children’s consumption of greens and beans in the United States of America. The study further notes the importance of equity-based disaggregation as race/ethnicity, birth places, and immigration status were significant predictors of FV purchases or consumption.

Health indicators. Direct health outcomes remain limited. Long-term anthropometric or metabolic endpoints are rarely captured, underscoring a gap relative to the more mature SSB tax literature. Among the exceptions, one nonrandomized intervention in South Africa and three prospective cohort studies in the United States of America reported pooled results that 10 percent decrease in price of fruits and vegetables was associated with 0.04 kg/m² (95 percent CI: 0 to 0.08) lower BMI (Afshin *et al.*, 2017).

Geographic coverage. Most evaluated programmes operate in high-income contexts, with only two systematic reviews reporting results from MICs (India and South Africa) and none from low-income settings. The modest Indian price reduction on pulses produced only a small uptick in purchases.

Synthesis. Subsidies for nutrient-dense foods promote increased consumption, with evidence showing that lowering prices leads to positive dietary changes. The effectiveness of these policies depends on how they are delivered, with larger or sustained incentives producing stronger impacts. Programmes targeted at low-income populations, such as revisions to the WIC food package, demonstrate how equity-focused approaches can enhance dietary quality among vulnerable groups. However, studies rarely capture long-term health outcomes, and the evidence remains largely limited to HICs. Table A6 summarizes the evidence on effect of subsidies as reported in the selected studies.

6. Concluding remarks

This review indicates that fiscal policy repurposing can potentially enable access to healthy diets when instruments are coherently designed and embedded within supportive policy settings. The evidence is strongest for sugar-sweetened beverage taxes: when rates are set at or above commonly cited effectiveness thresholds and linked to nutrient content, purchases and intake decline in proportion to the price increase, with early indications of downstream health gains. By contrast, fiscal measures targeting foods high in fat, sugar and salt are less widespread and, where implemented at low or uniform rates or with narrow bases, tend to yield modest effects that are vulnerable to substitution. Subsidies and consumer incentives consistently raise consumption of nutrient-dense foods, particularly among lower-income populations, yet remain limited in coverage, funding, and evaluation outside high-income contexts.

At the same time, the prevailing fiscal architecture is imbalanced. Governments have scaled corrective taxes more rapidly than positive price incentives, and upstream agricultural support continues to prioritize staples over nutrient-dense foods. This misalignment sustains relative price differentials that make healthy diets unaffordable for large population shares and requires consumer-facing instruments to counteract structural signals within the agrifood system. Repurposing public transfers toward nutrient-dense foods while reviewing border measures and market interventions that raise their consumer prices would increase policy coherence and strengthen the effectiveness of downstream fiscal measures.

Important evidence gaps remain. The literature is concentrated in HICs and UMICs settings, with limited empirical evaluation from LMICs where diet-related noncommunicable diseases are rising and fiscal space is constrained. Few studies follow long-term health outcomes, document substitution dynamics comprehensively, or assess heterogeneous effects across socioeconomic and demographic groups.

In sum, fiscal policy repurposing appears to be a credible and actionable lever for enabling healthier diets, provided that instruments are set at effective levels, aligned with nutrient risks, and integrated with upstream support that improves the affordability of nutrient-dense foods. Recent international processes, the ICN2 Framework for Action, the United Nations Food Systems Summit, and initiatives under the G20, signal a conducive policy window. Translating this momentum into coherent national reform packages that rebalance incentives, close affordability gaps, and strengthen monitoring and evaluation would advance nutrition, health, and broader sustainable development objectives.

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Annex 1. Supplementary tables

Table A1. List of included studies with attributes

Study	Type of study	No. of studies	Interventions reviewed	Outcomes reviewed
Afshin <i>et al.</i> (2017)	Systematic review and meta-analysis	30	SSB taxes, HFSS taxes, healthy food subsidies	Purchase, consumption
Alagiyawanna <i>et al.</i> (2015)	Systematic review	18	Food and beverage taxes, subsidies	Health and behavioural outcomes
Andreyeva <i>et al.</i> (2022a)	Systematic review	50	SSB taxes, HFSS taxes, healthy food subsidies	Economic and health outcomes
Andreyeva <i>et al.</i> (2022b)	Systematic review and meta-analysis	86	SSB taxes	Sales, prices, reformulation
Backholer <i>et al.</i> (2016)	Systematic review	4	SSB taxes	Equity effects on consumption
Barry <i>et al.</i> (2023)	Umbrella review	16 reviews	SSB taxes, HFSS taxes, healthy food subsidies	Purchases, health, substitution
Bucher <i>et al.</i> (2022)	Umbrella review	12 reviews	SSB taxes, HFSS taxes, healthy food subsidies	Purchases, energy intake
Dodd <i>et al.</i> (2020)	Systematic review	21	Salt taxes	Salt intake, mortality
Durao <i>et al.</i> (2020)	Systematic review	11	Healthy food subsidies (community-level)	Food expenditure, diet diversity
Falsafi <i>et al.</i> (2024)	Umbrella review	12 reviews	SSB taxes	SSB consumption, obesity, NCDs
Firdaus <i>et al.</i> (2024)	Systematic review	30+	SSB taxes	BMI, obesity, NCD mortality
Gittelsohn <i>et al.</i> (2017)	Systematic review	28	Pricing interventions	Availability, purchase, consumption
Hammaker <i>et al.</i> (2022)	Systematic review	53	SSB taxes, healthy food subsidies	Consumption, prices, awareness
Hansen <i>et al.</i> (2022)	Review of reviews	17 reviews	Food environment policies incl. pricing	Diet, health, inequity
Hyseni <i>et al.</i> (2017)	Systematic review	73	Pricing policies including SSB/food taxes and subsidies; and others	Diet, NCDs, cost-effectiveness
Itria <i>et al.</i> (2021)	Systematic review	13	SSB taxes	Overweight, obesity (by income)
Løvhaug <i>et al.</i> (2022)	Umbrella review	17 reviews	Food environment including fiscal policies	Equity in diet, health outcomes
Milani <i>et al.</i> (2019)	Umbrella review	34 reviews	HFSS taxes, food labelling, marketing regulation	Childhood obesity prevention
Niebylski <i>et al.</i> (2015)	Systematic review	30	Healthy food subsidies, HFSS taxes	Purchases, intake, BMI
Pfinder <i>et al.</i> (2020)	Systematic review	5	Sugar-added food taxes	Consumption, obesity
Pineda <i>et al.</i> (2024)	Systematic review	20	SSB taxes, HFSS taxes	Consumption, inequities

Study	Type of study	No. of studies	Interventions reviewed	Outcomes reviewed
Redondo et al. (2018)	Systematic review	9	SSB taxes	Price, purchase, substitution
Sassano et al. (2024)	Systematic review	12	SSB taxes	Overweight, obesity, diabetes
Stein et al. (2025)	Systematic review	21	Healthy food subsidies (incentive programs)	Food insecurity, diet quality
Teng et al. (2019)	Systematic review and meta-analysis	39	SSB taxes	Purchases, dietary intake
Vellakkal et al. (2022)	Systematic review	28	NCD-related public policies (including fiscal)	NCD prevention, effectiveness
Walls et al. (2018)	Systematic review	20	Agricultural input subsidies	Nutrition, food security
Wolfenden et al. (2021)	Umbrella review	98 reviews	Fruits and vegetables promotion incl. subsidies, education	Fruit and vegetable consumption
Zhang et al. (2020)	Systematic review	8	Healthy food subsidies	Fruits and vegetables purchase and consumption

Note: SSB = sugar-sweetened beverages; HFSS = foods high in fats, sugars and salts, NCD = non-communicable diseases, BMI = body mass index.

Sources: Author's own elaboration based on Afshin, A., Peñalvo, J.L., Del Gobbo, L., Silva, J., Michaelson, M., O'Flaherty, M., Capewell, S. *et al.* 2017. The prospective impact of food pricing on improving dietary consumption: A systematic review and meta-analysis. *PLoS ONE*, 12(3): e0172277. <https://doi.org/10.1371/journal.pone.0172277>; Alagiyawanna, A., Townsend, N., Mytton, O., Scarborough, P., Roberts, N. & Rayner, M. 2015. Studying the consumption and health outcomes of fiscal interventions (taxes and subsidies) on food and beverages in countries of different income classifications; a systematic review. *BMC Public Health*, 15(1): 887. <https://doi.org/10.1186/s12889-015-2201-8>; Andreyeva, T., Marple, K., Marinello, S., Moore, T.E. & Powell, L.M. 2022a. Outcomes Following Taxation of Sugar-Sweetened Beverages: A Systematic Review and Meta-analysis. *JAMA Network Open*, 5(6): e2215276. <https://doi.org/10.1001/jamanetworkopen.2022.15276>; Andreyeva, T., Marple, K., Moore, T.E. & Powell, L.M. 2022b. Evaluation of Economic and Health Outcomes Associated With Food Taxes and Subsidies: A Systematic Review and Meta-analysis. *JAMA Network Open*, 5(6): e2214371. <https://doi.org/10.1001/jamanetworkopen.2022.14371>; Backholer, K., Sarink, D., Beauchamp, A., Keating, C., Loh, V., Ball, K., Martin, J. & Peeters, A. 2016. The impact of a tax on sugar-sweetened beverages according to socio-economic position: a systematic review of the evidence. *Public Health Nutrition*, 19(17): 3070–3084. <https://doi.org/10.1017/S136898001600104X>; Barry, L.E., Kee, F., Woodside, J., Clarke, M., Cawley, J., Doherty, E., Crealey, G.E., Duggan, J. & O'Neill, C. 2023. An umbrella review of the effectiveness of fiscal and pricing policies on food and non-alcoholic beverages to improve health. *Obesity Reviews*, 24(7): e13570. <https://doi.org/10.1111/obr.13570>; Bucher Della Torre, S., Moullet, C. & Jotterand Chaparro, C. 2022. Impact of Measures Aiming to Reduce Sugars Intake in the General Population and Their Implementation in Europe: A Scoping Review. *International Journal of Public Health*, 66: 1604108. <https://doi.org/10.3389/ijph.2021.1604108>; Dodd, R., Santos, J.A., Tan, M., Campbell, N.R.C., Ni Mhurchu, C., Cobb, L., Jacobson, M.F. *et al.* 2020. Effectiveness and Feasibility of Taxing Salt and Foods High in Sodium: A Systematic Review of the Evidence. *Advances in Nutrition*, 11(6): 1616–1630. <https://doi.org/10.1093/advances/nmaa067>; Durao, S., Visser, M.E., Ramokolo, V., Oliveira, J.M., Schmidt, B.-M., Balakrishna, Y., Brand, A., Kristjansson, E. & Schoonees, A. 2020. Community-level interventions for improving access to food in low- and middle-income countries. *Cochrane Database of Systematic Reviews*, 2020(8). <https://doi.org/10.1002/14651858.CD011504.pub3>; Falsafi, N., Yousefi, M., Mahboub-Ahari, A. & Abdollahzad, H. 2024. Taxing for Change: An Umbrella Review of Impacts of Sugar-Sweetened Beverages (SSBs) Taxation in Low and Middle-Income Countries. *Health Scope*, 14(1). <https://doi.org/10.5812/healthscope-150597>; Firdaus, S., Andarwulan, N. & Hariyadi, P. 2024. Modeling and empirical evidence of the impact of implementation of sugar sweetened-beverages tax to reduce non-communicable diseases prevalence: a systematic review. *Frontiers in Nutrition*, 11: 1448300. <https://doi.org/10.3389/fnut.2024.1448300>; Consumption of Healthy Foods and Beverages: A Systematic Review. *Preventing Chronic Disease*, 14: 170213. <https://doi.org/10.5888/pcd14.170213>; Hammaker, J., Anda, D., Kozakiewicz, T., Bachina, V., Berretta, M., Shisler, S. & Lane, C. 2022. Systematic review on fiscal policy interventions in nutrition. *Frontiers in Nutrition*, 9: 967494. <https://doi.org/10.3389/fnut.2022.967494>; Hansen, K.L., Golubovic, S., Eriksen, C.U., Jørgensen, T. & Toft, U. 2022. Effectiveness of food environment policies in improving population diets: a review of systematic reviews. *European Journal of Clinical Nutrition*, 76(5): 637–646. <https://doi.org/10.1038/s41430-021-01008-y>; Hyseni, L., Atkinson, M.,

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Table A2. List of countries with sugar-sweetened beverages taxes

Country or jurisdiction	When introduced (last updated)	Tax instrument (structure)	Tax base	Tiered? (basis)
Albany, New York, United States of America	2017	Excise (specific)	Volume	
American Samoa	2001	Excise (specific)	Volume	
Argentina*	1996 (2017)	Excise (ad valorem)		Yes (beverage type)
Azerbaijan	2019	Excise (specific)	Volume	
Bahrain	2017	Excise (ad valorem)		Yes (beverage type)
Bangladesh*	2012	Vat/gst (ad valorem)		Yes (beverage type and place of manufacture)
Barbados	2015 (2022)	Excise (ad valorem)		
Belgium	2009 (2016)	Excise (specific)	Volume	Yes (beverage type)
Belize*	2000 (2017)	Excise (specific)	Volume	
Benin	2011 (2015)	Excise (ad valorem)		Yes (beverage type)
Berkeley, California, United States of America	2016	Excise (specific)	Volume	
Bermuda	2018 (2023)	Import (ad valorem)		Yes (beverage type and sugar content threshold)
Bolivia (Plurinational State of)	2016 (2022)	Excise (specific)	Volume	Yes (beverage type)
Boulder, Colorado, United States of America	2017	Excise (specific)	Volume	
Brazil*	1965 (2021)	Excise (ad valorem)		Yes (beverage type)
British Columbia, Canada	2021	Sales (ad valorem)		
Brunei Darussalam	2017 (2023)	Excise (specific)	Volume	
Burkina Faso	1995 (2023)	Excise (ad valorem)		
Burundi*	2012	Excise (mixed)	Volume	Yes (beverage type)
Cabo Verde	2019	Excise (ad valorem)		
Cambodia*	2003 (2023)	Excise (ad valorem)		Yes (beverage type)
Cameroon*	2019	Excise (mixed)	Volume	Yes (place of manufacture)
Catalonia, Spain	2017	Excise (specific)	Volume	Yes (sugar content threshold)
Central African Republic	2019	Excise (ad valorem)		
Chad*	2019	Excise (ad valorem)		
Chile	2014	Excise (ad valorem)		Yes (sugar content threshold)
Democratic Republic of the Congo	2018	Excise (ad valorem)		Yes (beverage type)
Cook Islands	2014	Excise (specific)	Sugar content	
Costa Rica*	2001 (2022)	Excise (specific)	Volume	Yes (beverage type)
Côte d'Ivoire	2018	Excise (ad valorem)		
Croatia	1994 (2020)	Excise (specific)	Volume	Yes (beverage type and sugar content threshold)
Dominica	2015	Excise (mixed)	Volume	Yes (beverage type)
Ecuador	2016	Excise (mixed)	Sugar content	Yes (beverage type and sugar content threshold)
Egypt	2016	Excise (ad valorem)		
El Salvador	2010	Excise (mixed)	Volume	Yes (beverage type)

Country or jurisdiction	When introduced (last updated)	Tax instrument (structure)	Tax base	Tiered? (basis)
Equatorial Guinea	2020	Excise (specific)	Volume	
Eritrea*	2001	Excise (mixed)	Volume	Yes (beverage type)
Ethiopia*	2003 (2020)	Excise (ad valorem)		Yes (beverage type)
Fiji	1986 (2023)	Excise (specific)	Volume	
Finland*	2001 (2011)	Excise (specific)	Volume	Yes (beverage type)
France (and overseas departments and regions)	2012 (2018)	Excise (specific)	Volume	Yes (sugar content threshold)
French Polynesia	2004 (2020)	Excise (specific)	Volume	Yes (sugar content threshold and place of manufacture)
Gabon	2013	Excise (ad valorem)		
Gambia*	2010	Excise (specific)	Volume	
Ghana*	2014 (2023)	Excise (ad valorem)		Yes (beverage type)
Grenada	2023	Vat/gst (ad valorem)		
Guatemala*	2002	Excise (specific)	Volume	Yes (beverage type)
Guinea-Bissau*	2022	Excise (mixed)	Volume	
Honduras	2020	Excise (specific)	Volume	
Hungary	2011 (2018)	Excise (specific)	Volume	Yes (beverage type)
India	2017	Vat/gst (ad valorem)		Yes (beverage type)
Ireland	2018 (2019)	Excise (specific)	Volume	Yes (sugar content threshold)
Isle of Man	2019	Excise (specific)	Volume	Yes (sugar content threshold)
Kenya*	2015	Excise (specific)	Volume	
Kiribati	2014	Excise (ad valorem)		
Kosrae, Federated States of Micronesia	1985	Excise (specific)	Volume	
Lao People's Democratic Republic*	2005 (2012)	Excise (ad valorem)		Yes (beverage type)
Latvia	2000 (2022)	Excise (specific)	Volume	Yes (sugar content threshold)
Liberia*	2011 (2020)	Excise (specific)	Volume	Yes (beverage type and place of manufacture)
Madagascar*	2016 (2022)	Excise (mixed)	Volume	Yes (beverage type and place of manufacture)
Malaysia	2019 (2023)	Excise (specific)	Volume	Yes (beverage type)
Maldives*	2017 (2020)	Import (mixed)	Volume	Yes (beverage type)
Mali	2005	Excise (ad valorem)		Yes (beverage type)
Marshall Islands	1989 (2016)	Import (mixed)	Volume	Yes (beverage type)
Mauritania*	2014 (2016)	Excise (ad valorem)		Yes (beverage type)
Mauritius	2013 (2022)	Excise (specific)	Sugar content	
Mexico	2014	Excise (mixed)	Volume	Yes (beverage type)
Monaco	2012 (2018)	Excise (specific)	Volume	Yes (sugar content threshold)
Montenegro	2001	Excise (specific)	Volume	
Morocco*	2019	Excise (specific)	Volume	Yes (beverage type and sugar content threshold)
Mozambique	2017	Excise (specific)	Volume	

Country or jurisdiction	When introduced (last updated)	Tax instrument (structure)	Tax base	Tiered? (basis)
Nauru	2007	Import (ad valorem)		
Navajo Nation, United States of America	2015 (2020)	Sales (ad valorem)		
Nepal	2002 (2022)	Excise (specific)	Volume	Yes (beverage type)
Netherlands (Kingdom of the)*	1992 (2023)	Excise (specific)	Volume	
New Caledonia	2017	Import (ad valorem)		
New Caledonia	2017	Vat/gst (ad valorem)		
Newfoundland and Labrador, Canada	2022	Excise (specific)	Volume	
Nicaragua*	2019 (2021)	Excise (ad valorem)		
Niger	2015	Excise (ad valorem)		Yes (beverage type)
Nigeria	2021	Excise (specific)	Volume	
Niue	1969 (2016)	Import (ad valorem)		
Northern Mariana Islands	1995	Excise (specific)	Volume	
Oakland, California, United States of America	2017	Excise (specific)	Volume	
Oman	2019 (2020)	Excise (ad valorem)		Yes (beverage type)
Pakistan*	2005 (2023)	Excise (ad valorem)		Yes (beverage type)
Palau*	2003	Import (mixed)	Volume	
Panama	1995 (2019)	Excise (ad valorem)		Yes (beverage type)
Paraguay*	1992 (2015)	Excise (ad valorem)		
Peru	1999 (2021)	Excise (ad valorem)		Yes (sugar content threshold)
Philadelphia, Pennsylvania, United States of America	2017	Excise (specific)	Volume	
Philippines	2018	Excise (specific)	Volume	Yes (sweetener type)
Poland	2021	Excise (specific)	Sugar content and volume	Yes (beverage type and sugar content threshold)
Portugal	2017	Excise (specific)	Volume	Yes (sugar content threshold)
Qatar	2019	Excise (ad valorem)		Yes (beverage type)
Romania	2023	Vat/gst (ad valorem)		
Russian Federation	2023	Excise (specific)	Volume	
Rwanda*	2019	Excise (ad valorem)		Yes (beverage type)
Saint Helena	2014 (2018)	Excise (specific)	Volume	
Saint Kitts and Nevis	2010	Excise (ad valorem)		
Saint Vincent and the Grenadines	2007	Excise (ad valorem)		Yes (beverage type)
Samoa	1998 (2018)	Excise (specific)	Volume	
San Francisco, California, United States of America	2018	Excise (specific)	Volume	
Sao Tome and Principe	1976 (2017)	Excise (ad valorem)		Yes (beverage type)
Saudi Arabia	2017 (2019)	Excise (ad valorem)		Yes (beverage type)
Seattle, Washington, United States of America	2018	Excise (specific)	Volume	
Senegal*	2001 (2018)	Excise (ad valorem)		

Country or jurisdiction	When introduced (last updated)	Tax instrument (structure)	Tax base	Tiered? (basis)
Seychelles	2019	Excise (specific)	Volume	
South Africa	2018	Excise (specific)	Sugar content	
South Sudan*	2009	Excise (ad valorem)		
Spain	2021	Vat/gst (ad valorem)		
Sri Lanka	2018 (2020)	Excise (specific)	Sugar content and volume	Yes (beverage type)
Suriname*	2006	Excise (specific)	Volume	
Tajikistan*	2018 (2018)	Excise (specific)	Volume	Yes (beverage type)
United Republic of Tanzania*	2018	Excise (specific)	Volume	Yes (beverage type and place of manufacture)
Thailand *	2017	Excise (mixed)	Volume	Yes (beverage type and sugar content threshold)
Timor-Leste	2023	Excise (specific)	Volume	
Togo	2019	Excise (ad valorem)		
Tonga	2013 (2018)	Excise (specific)	Volume	Yes (sugar content threshold)
Tunisia	2018	Excise (ad valorem)		
Türkiye	2002 (2017)	Excise (ad valorem)		
Tuvalu	2009 (2020)	Excise (ad valorem)		
Uganda*	2014	Excise (mixed)	Volume	Yes (beverage type)
United Arab Emirates	2017 (2019)	Excise (ad valorem)		Yes (beverage type)
United Kingdom of Great Britain and Northern Ireland	2018	Excise (specific)	Volume	Yes (sugar content threshold)
Uruguay*	1990	Excise (specific)	Volume	Yes (beverage type)
Vanuatu	2002 (2012)	Import (ad valorem)		
Vanuatu	2015	Excise (specific)	Volume	
Wallis and Futuna Islands*	2017 (2017)	Import (ad valorem)		
Yap, Federated States of Micronesia*	1981	Excise (specific)	Volume	
Zambia	2018	Excise (specific)	Volume	
Zimbabwe*	2022	Excise (mixed)	Volume	Yes (beverage type)

Notes: * The asteric shows that the tax policy includes unsweetened water.

Source: Obesity Evidence Hub. 2025. Countries and jurisdictions that have taxes on sugar-sweetened beverages (SSBs). In: *Obesity Evidence Hub*. [Cited 26 November 2025]. <https://www.obesityevidencehub.org.au/collections/prevention/countries-that-have-implemented-taxes-on-sugar-sweetened-beverages-ssbs>

Table A3. List of countries with taxes on unhealthy foods

Country/ jurisdiction	Year(s)	Tax base	Type of tax	Tax structure	Uniform/tiered	Rate
Bermuda	2018; 2019	Sugar-sweetened beverages (SSBs); sugar confectionery (excl. cocoa-based); from 2019 all cocoa + added-sugar foods; subsidies on select fruit and vegetables	Import duty	Ad valorem	Uniform	50% (2018) to 75% (2019)
Canada	2006	Salty/savoury snack foods (chips, puffs, popcorn, bacon crisps); excludes crackers and breakfast cereals	Excise	Ad valorem	Tiered	10% / 20%
Denmark (repealed)	2011–2012	Products > 2.3 g saturated fat/100 g (meat, dairy, rendered fats, oils, margarine, spreads)	Excise tax	Specific	Uniform	DKr 16/kg sat fat (~USD 2.50/kg)
Dominica	2015	Sweets, candy, chocolate bars	Excise tax	Ad valorem	Uniform	10%
Ethiopia	2020	Margarine and hydrogenated fats > 40% sat fat or > 0.5% transfat; non-hydrogenated oils > 40% sat fat	Excise tax	Ad valorem	Uniform	50% margarine; 40% hydrogenated fats and oils; 30% non-hydrogenated oils
Fiji (confectionery/ ice-cream repealed 2017)	2014 (–2017)	Confectionery, ice-cream	Excise tax	Specific	Uniform (tiered for SSBs)	EUR 0.95/kg confectionery and ice-cream
Finland	2000; 2011–2017	Candy, ice-cream	Excise tax	Specific	Uniform	EUR 0.95/kg
French Polynesia	2002	Imported confectionery, marmalade/jam, ice-cream	Import duty and excise (on SSBs)	Specific	Tiered	CFPF 20/kg (5–10 g sugar/100 g); CFPF 40 (10–30 g); CFPF 60 (30–40 g); CFPF 85 (> 40 g)
Hungary	2011	Pre-packaged high-sugar foods, chocolates, sweetened powders, salted snacks, condiments, jams	Excise tax	Specific	Uniform per product category	Ft 130/kg high-sugar; Ft 70/kg sugar-sweetened cocoa powder; Ft 250/kg salted snacks; Ft 500/kg jams
Mexico	2014	Non-essential energy-dense foods > 275 kcal/100 g	Excise tax	Ad valorem	Uniform	8%
Maine (United States of America)	1991–2001	Snack foods (crackers, ice-cream, muffins, cookies, cakes, gelatine, pudding, hot cocoa mix, marshmallows, breakfast bars, roasted nuts)	Sales tax	Specific	Uniform	5.5%
Nauru	2007	Imported sugar, confectionery,	Import duty	Ad valorem	Uniform	30%

Country/ jurisdiction	Year(s)	Tax base	Type of tax	Tax structure	Uniform/tiered	Rate
		carbonated soft drinks, cordials, flavoured milks, drink mixes				
Norway (sugar)	1981–2020	Granulated sugar, icing sugar, rock candy, refined/pearl sugar (excludes sugar used as ingredient)	Excise tax	Specific	Uniform	NKr 8.20/kg sugar (~ USD 0.96/kg)
Norway (chocolate and sugar)	1924–2021	Chocolate and sugar products	Excise tax	Specific	Uniform per category	NKr 21.22/kg (~ USD 2.50/kg)
Samoa	2012	High-fat turkey tails	Import duty	Ad valorem; Specific	Uniform	100%
St Vincent and the Grenadines	2016	Brown sugar	VAT	Ad valorem	Uniform	15%
Tonga	2013	Animal fat products, turkey tails	Import duty	Specific	Uniform per category	T\$ 2/kg fats and noodles; T\$ 1.5/kg turkey tails and ice- cream (2016 rates)
Navajo Nation (United States of America)	2015	Minimal-nutritional- value snacks (high salt, fat, sugar), sweets, SSBs; water/produce/nuts exempt	Sales tax	Ad valorem	Uniform	2%
Colorado (United States of America)	2010	Candy (sugar-based bars, drops, pieces; excludes flour-based products)	Sales tax	Specific	Uniform	2.9%

Source: Pineda, E., Gressier, M., Li, D., Brown, T., Mounsey, S., Olney, J. & Sassi, F. 2024. Review: Effectiveness and policy implications of health taxes on foods high in fat, salt, and sugar. *Food Policy*, 123: 102599. <https://doi.org/10.1016/j.foodpol.2024.102599>

Table A4. Effect of sugar-sweetened beverage taxes implemented as reported in the select studies

Systematic review	Sugar-sweetened beverage tax implemented	Country/location	Reported outcome
Afshin <i>et al.</i>, 2017	10% price increase	Multiple countries	7% decrease in consumption (95% CI: 3–10%).
Andreyeva <i>et al.</i> 2022b	10–20%	Multiple countries	15% reduction in sales (mean); price elasticity –1.59; changes on consumption insignificant.
Barry <i>et al.</i>, 2023	10%	Global	10.2% decrease in SSB purchasing/consumption per 10% price increase.
Falsafi <i>et al.</i>, 2024	20% excise tax	South Africa	20% tax reduced daily energy intake by 36 kJ; projected 3.8% obesity prevalence decline in men and 2.4% in women.
	20% tax simulation	India	Reduction in intake by 0.94% for each 1% price increase; expected 1.6% reduction in overweight and 5.9% in obesity prevalence.
	Various (1% to 20%)	Brazil	A 1% price increase led to a 0.85% reduction in SSB calories; substitution to milk and fruit juice observed.
Firdaus <i>et al.</i>, 2024	10–25%	Global	Reduction in BMI (up to –1.05 kg/m ²), overweight (0.9–3%), obesity (up to 11.75%).
Hammaker <i>et al.</i> (2022)	Multiple	Global	Standardized mean difference of –0.14 [95% CI: –0.29 to –0.07] in purchase of taxed beverages.
Hyseni <i>et al.</i> (2017)	10% price increase	Multiple countries	8–10% reduction in SSB consumption.
	5–30% modelled taxes	Multiple countries	5–48% reduction in SSB consumption
Itria <i>et al.</i> (2021)	20% value added	Australia	12.6% drop in consumption; 16 kJ/day reduction for men, 9 kJ/day for women.
	10% ad valorem tax	Barbados	SSB sales decreased by 8.6 ml/capita/week (95% CI: –10.0, –7.3).
	USD 0.01/oz	California, United States of America	9.6% sales reduction; energy intake reduced by 6.4 kcal/person/day.
	13–18% tiered excise tax	Chile	21.6% drop in sugar-sweetened beverage purchases; no significant body mass index change.
	20% excise tax	India	0.94% consumption drop per 1% price rise; substitution increases for milk, fruit juice, tea.
	1 peso/liter (≈10%) and 2 peso/liter (≈20%)	Mexico	21.62 ml/person/day reduction (10% tax); 43.23 ml/day (20% tax).
	USD 0.015/oz	Philadelphia, United States of America	40% drop in consumption; 64% in energy drinks; bottled water increased.
	20% sales tax	United Kingdom of Great Britain and Northern Ireland	15% consumption reduction; 16.7 kcal/person/day energy intake reduction.
Sassano <i>et al.</i> (2024)	Ad valorem	El Salvador	Child obesity: $\beta = -0.871$ (95% CI: –1.525, –0.217) (level).
	Amount-specific	Finland	Child overweight: $\beta = 0.245$ (95% CI: 0.034, 0.315) (post-intervention slope).
	Amount-specific / ad valorem	Hungary	Overweight: $\beta = -0.227$ (95% CI: –0.344, –0.110); Diabetes: $\beta = -0.537$ (95% CI: –1.030, –0.043).
	Amount-specific	Palau	Child obesity: $\beta = -0.161$ (95% CI: –0.310, –0.012).
	Amount-specific	Panama	Obesity: $\beta = -0.580$ (95% CI: –0.719, –0.441) (slope reduction).
	Amount-specific	Samoa	Child overweight: $\beta = -1.589$ (95% CI: –2.546, –0.631) (level reduction); $\beta = -0.148$ (slope).

Systematic review	Sugar-sweetened beverage tax implemented	Country/location	Reported outcome
	Amount-specific	Tonga	Child obesity: $\beta = -0.492$ (95% CI: $-0.630, -0.354$); level $\beta = -1.299$ (95% CI: $-2.284, -0.313$).
	Ad valorem	Uruguay	Child obesity (2001): $\beta = -1.062$ (95% CI: $-1.850, -0.273$) (level).

Note: Where a systematic review provides a pooled or narrative effect estimate, this is reported. If no such estimate is provided, selected outcome information is extracted from the individual studies included within the review.

Sources: Author's own elaboration based on Afshin, A., Peñalvo, J.L., Del Gobbo, L., Silva, J., Michaelson, M., O'Flaherty, M., Capewell, S. *et al.* 2017. The prospective impact of food pricing on improving dietary consumption: A systematic review and meta-analysis. *PLOS ONE*, 12(3): e0172277. <https://doi.org/10.1371/journal.pone.0172277>; Andreyeva, T., Marple, K., Marinello, S., Moore, T.E. & Powell, L.M. 2022. Outcomes Following Taxation of Sugar-Sweetened Beverages: A Systematic Review and Meta-analysis. *JAMA Network Open*, 5(6): e2215276. <https://doi.org/10.1001/jamanetworkopen.2022.15276>; Barry, L.E., Kee, F., Woodside, J., Clarke, M., Cawley, J., Doherty, E., Crealey, G.E., Duggan, J. & O'Neill, C. 2023. An umbrella review of the effectiveness of fiscal and pricing policies on food and non-alcoholic beverages to improve health. *Obesity Reviews*, 24(7): e13570. <https://doi.org/10.1111/obr.13570>; Bucher Della Torre, S., Moullet, C. & Jotterand Chaparro, C. 2022. Impact of Measures Aiming to Reduce Sugars Intake in the General Population and Their Implementation in Europe: A Scoping Review. *International Journal of Public Health*, 66: 1604108. <https://doi.org/10.3389/ijph.2021.1604108>; Falsafi, N., Yousefi, M., Mahboub-Ahari, A. & Abdollahzad, H. 2024. Taxing for Change: An Umbrella Review of Impacts of Sugar-Sweetened Beverages (SSBs) Taxation in Low and Middle-Income Countries. *Health Scope*, 14(1). <https://doi.org/10.5812/healthscope-150597>; Firdaus, S., Andarwulan, N. & Hariyadi, P. 2024. Modeling and empirical evidence of the impact of implementation of sugar sweetened-beverages tax to reduce non-communicable diseases prevalence: a systematic review. *Frontiers in Nutrition*, 11: 1448300. <https://doi.org/10.3389/fnut.2024.1448300>; Consumption of Healthy Foods and Beverages: A Systematic Review. *Preventing Chronic Disease*, 14: 170213. <https://doi.org/10.5888/pcd14.170213>; Hammaker, J., Anda, D., Kozakiewicz, T., Bachina, V., Berretta, M., Shisler, S. & Lane, C. 2022. Systematic review on fiscal policy interventions in nutrition. *Frontiers in Nutrition*, 9: 967494. <https://doi.org/10.3389/fnut.2022.967494>; Hyseni, L., Atkinson, M., Bromley, H., Orton, L., Lloyd-Williams, F., McGill, R. & Capewell, S. 2017. The effects of policy actions to improve population dietary patterns and prevent diet-related non-communicable diseases: scoping review. *European Journal of Clinical Nutrition*, 71(6): 694–711. <https://doi.org/10.1038/ejcn.2016.234>; Itria, A., Borges, S.S., Rinaldi, A.E.M., Nucci, L.B. & Enes, C.C. 2021. Taxing sugar-sweetened beverages as a policy to reduce overweight and obesity in countries of different income classifications: a systematic review. *Public Health Nutrition*, 24(16): 5550–5560. <https://doi.org/10.1017/S1368980021002901>; Sassano, M., Castagna, C., Villani, L., Quaranta, G., Pastorino, R., Ricciardi, W. & Boccia, S. 2024. National taxation on sugar-sweetened beverages and its association with overweight, obesity, and diabetes. *The American Journal of Clinical Nutrition*, 119(4): 990–1006. <https://doi.org/10.1016/j.ajcnut.2023.12.013>

Table A5. Effect of taxes on foods high in fats, sugars, and salts as reported in reviews

Systematic reviews	Price Increase through fiscal measures	Country	Target products	Reported outcomes
Dodd <i>et al.</i>, 2020	USD 0.89/kg	Hungary	Salty snacks, condiments	11–16% changed behaviour; only 5% chose healthier alternatives. Most switched to cheaper brands. Consumption remained high.
	Excise tax USD 0.90/kg	Tonga	Instant noodles	Decline in imports observed. One year later, 30% reported reducing consumption, but substitution toward local untaxed noodles occurred.
	USD 0.30 per gram of excess salt	Australia	Excess salt in food	Predicted reduction in salt intake by 67 mg/day. Averted 130 000 disability-adjusted life years (DALYs).
	20%	New Zealand	Foods with high salts	11% reduction in household salt purchase; ~2000 deaths averted annually.
	17.50%	United Kingdom of Great Britain and Northern Ireland	Foods high in fats, sugars, and salts	1–6% reduction in salt consumption; United Kingdom of Great Britain and Northern Ireland modelling showed 2100–2500 deaths averted.
	18%	Chile	Foods high in fats, sugars, and salts	Estimated to reduce salt intake by 22.5 mg/day; changes in nutrient intake similar across income groups.
Pineda <i>et al.</i> (2024)	8%	Mexico	Energy-dense snacks; candies, chocolates, snacks; bakery items	2–3% reduction in calorie and sugar intake; 5.1% reduction in taxed food purchases; 5.3% reduction in sales (5.4g/week); cereal-based sweets down 4.7g/week; 5% reduction in bakery purchases.
	16 Dkr/kg	Denmark	High-fat foods	4–6% decrease in saturated fat intake.
	100–500 Ft/kg	Hungary	Confectionery	3% reduction in intake; 6–12% drop in sales.
Afshin <i>et al.</i>, 2017	10%–25%	Multiple countries	Fast food / other unhealthy foods	3% decrease in fast food (95% CI: 1–5%) and 9% decrease for other unhealthful foods (95% CI: 6–12%).
Hyseni <i>et al.</i> (2017)	14 Dkr/kg saturated fat	Denmark	Saturated fats	7.4% reduction in saturated fat intake.
	Fat tax proportional to fat content (up to 15%)	United Kingdom of Great Britain and Northern Ireland	High-fat foods	Modest reductions in total fat (–1.6%) and saturated fat (–2%) intake.
Wolfenden <i>et al.</i>, 2021	10% price increase	Global	Fruits and vegetables	Reduced fruits and vegetable intake by 7.2% (low-income), 6.5% (middle), 5.3% (high).
Bucher <i>et al.</i>, 2022	PHPT tax (Hungary)	Hungary	Sugar-added foods	4% decrease in mean consumption of taxed foods (95% CI: –0.07 to –0.01); evidence rated very low certainty.

Note: Where a systematic review provides a pooled or narrative effect estimate, this is reported. If no such estimate is provided, selected outcome information is extracted from the individual studies included within the review.

Sources: Author’s own elaboration based on Dodd, R., Santos, J.A., Tan, M., Campbell, N.R.C., Ni Mhurchu, C., Cobb, L., Jacobson, M.F. *et al.* 2020. Effectiveness and Feasibility of Taxing Salt and Foods High in Sodium: A Systematic Review of the Evidence. *Advances in Nutrition*, 11(6): 1616–1630. <https://doi.org/10.1093/advances/nmaa067>; Pineda, E., Gressier, M., Li, D., Brown, T., Mounsey, S., Olney, J. & Sassi, F. 2024. Review: Effectiveness and policy implications of health taxes on foods high in fat, salt, and sugar. *Food Policy*, 123: 102599. <https://doi.org/10.1016/j.foodpol.2024.102599>; Afshin, A., Peñalvo, J.L., Del Gobbo, L.,

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Table A6. Effect of healthy food subsidies evaluated as reported in included reviews

Systematic review	Fiscal measures	Country/location	Targeted food group	Reported outcome
Andreyeva et al., 2022	10% price decrease	Multiple countries	Fruits and vegetables	5.9% increase in sales (price elasticity: -0.59, 95% CI: -1.04 to -0.13)
	10-25% discount	South Africa	Fruits and vegetables	increase in daily servings of 0.382 (for 10% discount) to 0.636 (for 25% discount) and substitution away from unhealthy food
Afshin et al., 2017	10% price decrease	Multiple countries	Fruits, vegetables, low-fat foods	12% increase in overall healthy food consumption (95% CI: 10–15%); 14% for fruits and vegetables (95% CI: 11–17%)
Gittelsohn et al. (2017)	Multiple	Multiple countries	Fruits and vegetables	Increased sales and consumption of healthier foods, decreased sale and consumption of unhealthy foods
Hammaker et al. (2022)	Price reduction for pulses	India	Pulses	Slight increase in pulse purchases ($\mu = 0.02$ [95% CI: 0.01 to 0.03]; $p < 0.001$)
Hyseni et al. (2017)	25–50% discounts	United States of America, Germany, United Kingdom of Great Britain and Northern Ireland, Canada, South Africa, France and Holland	Fruits and vegetables	0.38–0.64 servings/day increase in fruits and vegetables intake
	10% subsidy	United States of America	Fruits and vegetables	2–5% increase in intake among low-income consumers
	USD 10/week voucher for 6 months	United States of America and United Kingdom of Great Britain and Northern Ireland	Fruits and vegetables	Increase in fruits and vegetables intake from 4.8 to 7.8 servings/day, sustained post-intervention
Wolfenden et al., 2021	10% price reduction	Global	Fruits and vegetables	Increased intake by 14% (95% CI: 11%–17%) 10% increase in the price of fruits and vegetables = decrease in fruits and vegetables 7.2% in LIC, 6.5% in MIC, and 5.3% in HIC; $p < .001$
Zhang et al. (2020)	USD 6/month for children, USD 10–11/month for women (post-2009 WIC revision)	United States of America	Fruits and vegetables	3.4 times increase in greens and beans consumption among WIC children; 3.7 HEI points increase vs. control group

Sources: Author's own elaboration based on ndreyeva, T., Long, M.W. & Brownell, K.D. 2010. The Impact of Food Prices on Consumption: A Systematic Review of Research on the Price Elasticity of Demand for Food. *American Journal of Public Health*, 100(2): 216–222. <https://doi.org/10.2105/AJPH.2008.151415>; Afshin, A., Peñalvo, J.L., Del Gobbo, L., Silva, J., Michaelson, M., O'Flaherty, M., Capewell, S. et al. 2017. The prospective impact of food pricing on improving dietary consumption: A systematic review and meta-analysis. *PLOS ONE*, 12(3): e0172277. <https://doi.org/10.1371/journal.pone.0172277>; Gittelsohn, J., Trude, A.C.B. & Kim, H. 2017. Pricing Strategies to Encourage Availability, Purchase, and Consumption of Healthy Foods and Beverages: A Systematic Review. *Preventing Chronic Disease*, 14: 170213. <https://doi.org/10.5888/pcd14.170213>; Hammaker, J., Anda, D., Kozakiewicz, T., Bachina, V., Berretta, M., Shisler, S. & Lane, C. 2022. Systematic review on fiscal policy interventions in nutrition. *Frontiers in Nutrition*, 9: 967494. <https://doi.org/10.3389/fnut.2022.967494>; Hyseni, L., Atkinson, M., Bromley, H., Orton, L., Lloyd-Williams, F., McGill, R. & Capewell, S. 2017. The effects of policy actions to improve population dietary patterns and prevent diet-related non-communicable diseases: scoping review. *European Journal of Clinical Nutrition*, 71(6): 694–711. <https://doi.org/10.1038/ejcn.2016.234>; Wolfenden, L., Barnes, C., Lane, C., McCrabb, S., Brown, H.M., Gerritsen, S., Barquera, S. et al. 2021. Consolidating evidence on the effectiveness of interventions promoting fruit and vegetable consumption: an umbrella review. *International Journal of Behavioral Nutrition and Physical Activity*, 18(1): 11. <https://doi.org/10.1186/s12966-020-01046-y>

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ISBN 978-92-5-140561-1



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CD8684EN/1/03.26