WHO MANUAL ON

SUGAR-SWEETENED BEVERAGE TAXATION POLICIES

TO PROMOTE HEALTHY DIETS

World Health Organization

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Contents

Foreword

Obesity and diet-related noncommunicable diseases (NCDs) have been steadily increasing globally, and with them, a pressing need to implement evidence-based responses which address the contributing factors. Fortunately, there are a series of policy solutions that governments can implement to influence the creation of food environments that enable consumers to make healthier choices and mitigate the alarming trends of diet-related NCDs.

Among the evidence-based policy options to improve food environments is the implementation of taxes on sugar-sweetened beverages (SSBs). Excess sugar consumption is linked to a variety of diet-related NCDs and adverse health conditions — including type 2 diabetes mellitus, dental caries, and excess weight — which in turn are associated with obesity, heart disease, cancer, and strokes. With SSBs among the leading sources of free sugar intake in many countries, offering little-to-no added nutritional value and carrying a significant association with weight gain and obesity, there has been increased interest in implementing SSB taxes to curb consumption. This is happening as the growing affordability of SSBs, especially in low- and middle-income countries (LMICs), threatens to worsen existing global health inequalities.

Over the past few decades, tobacco and alcohol taxes have gained widespread recognition as an effective public health tool to reduce the consumption of harmful products, along with their associated health burden, by raising product prices and thus reducing their affordability. A growing body of evidence and country experiences indicate that SSB taxes are also an effective tool to reduce consumption, with the potential to improve health.

There is now growing momentum to support the implementation of SSB taxes. This tax manual, which seeks to harness this impetus, is a practical guide for policy-makers and others involved in SSB tax policy development to promote healthy diets and populations. It features summaries and case studies of SSB global taxation evidence, and provides support on the policy-cycle development process to implement SSB taxation — from problem identification and situation analysis to the monitoring and evaluation phase. Significantly, the manual also identifies and debunks industry tactics designed to dissuade policy-makers from implementing these taxes.

SSB taxes can be a win-win-win strategy: a win for public health (and averted health-care costs), a win for government revenue, and a win for health equity.

The novelty of SSB taxation as a policy measure means that observational evidence on health improvements resulting from SSB taxes is currently sparse. Although longer-term data is needed to establish this causal relationship, existing evidence already shows a clear impact of SSB taxes on reducing purchases and increasing government revenue, which are used in many countries to finance health or social objectives.

The benefits of SSB taxes, therefore, can contain much untapped potential and generate substantial gains. This is true both in terms of additional countries applying SSB taxes, and of augmenting health benefits in those already applying such taxes. The rewards can also be magnified if taxes are implemented as part of a comprehensive policy package, including other demand-reduction measures such as restricting the marketing of SSBs, regulating their labels, and banning SSBs from schools and other settings. Delaying SSB tax implementation for the causal evidence linking it to improved health outcomes is risky given the current rise in NCDs and patterns of unhealthy food consumption. By the time absolute evidence is available, it might be too late.

This SSB tax manual was written during a period when government finances have been depleted by COVID-19 pandemic-related health and economic expenses. The evidence and case studies presented illustrate how underutilized taxes on SSBs can be a means to increase government revenue and, in the long term, decrease pressure on healthcare systems. It should be seen as a guide to illuminate this unique opportunity, and as a crucial step towards rebuilding and saving lives.

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ACRONYMS

BMI	Body mass index
CSR	Corporate social responsibility
CIF	Cost, insurance and freight
DALYs	Disability-adjusted life years
HS	Harmonized system
HICs	High-income countries
IMF	International Monetary Fund
LMICs	Low- and middle-income countries
NCDs	Noncommunicable diseases
OOP	Out-of-pocket
OECD	Organisation for Economic Co-operation and Development
PAHO	Pan American Health Organization
SDIL	Soft Drinks Industry Levy
SSB	Sugar-sweetened beverage
SDGs	Sustainable Development Goals
VAT	Value added tax
GINA	WHO Global database for Information on Nutrition Action
WHO	World Health Organization

Executive summary

> "Sugar, rum, and tobacco are commodities which are nowhere necessaries of life, which are become objects of almost universal consumption, and which are therefore extremely proper subjects of taxation."
> Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, 1776

The use of taxation to promote health and correct for negative externalities is not a new policy idea. Tax measures on unhealthy products are an effective and important means to reduce their consumption. Tobacco and alcohol taxes have long been employed to raise revenue and are increasingly used with the primary aim of reducing consumption to improve health. The global evidence overwhelmingly indicates that taxation of tobacco and alcohol is an effective policy tool for reducing their use around the world. As rates of obesity and diet-related noncommunicable diseases (NCDs) continue to increase, significant attention has been given to the role that sugar-sweetened beverages (SSBs) play in these increases. This is due to the observed association between SSBs with said diseases, along with their high caloric content, and high sugar content.

As the number of countries taxing SSBs increases, the available and emerging empirical evidence indicates that such taxation can be an effective lever for promoting healthier diets and improving population health. This manual is designed to support health and finance ministries in the growing number of countries that are exploring the use of SSB taxation to promote healthy diets, advance population health and improve societal welfare. Specifically, this manual is designed to *(1)* explain key economic concepts related to SSB taxation for public health personnel and SSB tax advocates to aid effective dialogue with finance ministry officials, and *(2)* provide finance ministry and health ministry officials with appropriate national-level examples in the implementation of SSB excise taxes, along with key considerations and strategies for effective SSB tax policy development, design, implementation and administration.

Chapter 1 of this technical manual articulates the economic and public health rationales for taxing SSBs, along with a brief summary of the health and economic impact of SSB consumption. While the health rationale rest on the health burden caused by excess sugars consumption derived from the consumption of SSBs, the economic rationale rests on the negative externalities and internalities caused by excess sugars consumption.

Chapter 2 provides a review of the evidence on the impact of SSB taxes. This includes the effect of SSB taxes on prices, sales, consumption, revenue and health. Overall, country experiences show that SSB taxes can increase prices, decrease consumption, and mobilize additional revenue. Modelling exercises also indicate that there can be substantial health gains.

There are many domains in which governments can intervene to promote healthier diets, including SSB taxes. Chapter 3 provides a road map of issues to consider when building a case for implementing SSB taxes. These include the health burden attributable to SSBs, political feasibility, technical feasibility and industry opposition.

Chapter 4 provides an overview of tax policy design elements that must be considered during the design process of an SSB tax, including taxable products, tax types, tax structures, tax base and tax rates. This section also provides country experiences. Overall, SSB taxes should apply to all categories of SSBs (including sugar-sweetened carbonates, fruit-flavoured drinks, fruit juices, sports and energy drinks, vitamin water drinks, sweetened iced teas and lemonades and sweetened or flavoured milk drinks and yogurts, as well as powders, concentrates or syrups used to make SSBs by adding water or carbonated water), but should exclude bottled water. Amongst the different types of taxes, excise taxes are preferred from a public health perspective because they raise the relative price of SSBs compared to other products and services in the economy, making the targeted products less affordable. While tiered taxes based on sugar content can encourage industry reformulation, it requires substantially higher technical tax administration capacity, so due consideration should be given of available tax administration capacity when considering tiered taxes.

Strong tax administration is necessary for SSB taxes to be effective in protecting health and generating revenue. Chapter 5 describes issues in SSB excise tax administration. To ensure compliance, the accuracy of information for the tax compliance cycle is key, including clear and straightforward taxpayer registration and licensing, declaration, recordkeeping, warehousing, distribution, collection and tax refund processes. If enforcement is weak, then the health impact of an SSB excise tax may be affected. The effective coordination between actors involved in the facilitation and enforcement of compliance is key to the effective administration of an SSB excise tax.

Chapter 6 focuses on the political economy of SSB excise taxation, highlighting the obstacles and challenges that governments often face when seeking to adopt SSB excise taxes. It covers arguments frequently used by opponents of SSB excise taxes. The industry's arguments against SSB tax policies can be roughly organized into the five categories of SCARE tactics: (S) sowing doubt by discrediting science and diverting attention, (C) court and legal challenge threats, (A) anti-poor rhetoric (regressivity), (R) revenue instability and (E) employment impact.

The use of strong scientific evidence to support policy decisions, a strong coalition of support, a well-developed advocacy strategy and strategic framing are all elements that strengthen an SSB tax policy's likelihood of success and the ability to counter common criticisms from vested interests.

Chapter 7 considers what to measure in an evaluation, how to establish a possible causal impact, the signal-to-noise problem and indicators for monitoring and evaluating SSB excise tax policies. In the short-term it is easier to detect changes and attribute causality for proximal outcomes such as sales or sugars content of taxed products with large taxes, because health outcomes take more time to manifest.

The conclusion reiterates the main takeaways and provides key considerations for countries contemplating the implementation of SSB excise taxes. The considerations seek to guide policy-makers in advancing public health, revenue and sustainable-development objectives more broadly.

This manual is one of several existing and forthcoming products that focus on the use of health taxes to advance public health objectives, including: the *WHO resource tool on alcohol and taxation policies* (published 2017), the *WHO technical manual on tobacco tax policy and administration* (published 2021), the book *Health taxes: policy and practice* (published 2022) and the *WHO Technical Manual on Alcohol Tax Policy and Administration* (forthcoming). Taken together, these materials provide a complementary and comprehensive picture of the economics of taxation of alcohol, tobacco, and SSBs.

CHAPTER 1.
Introduction

Health taxes are imposed on products that have a negative public health impact and create strain on health systems (e.g., taxes on tobacco, alcohol, SSBs and, increasingly, fossil fuels). Consumption of these products is a major risk factor for NCDs — including cardiovascular diseases, cancer, respiratory diseases and diabetes — and produces negative consequences for individuals and societies. Although the primary goal of health taxes is to improve population health by reducing consumption of unhealthy products, they represent a triple-win policy for governments, as they can also: generate additional tax revenue; reduce long-term health care costs; and reduce health inequities. Health taxes are cost-effective — but largely underused — policies with untapped potential for improving health, mobilizing government revenue and enhancing equity *(1)*.

As rates of obesity and diet-related NCDs (including dental caries, type 2 diabetes, and cardiovascular disease) have increased throughout much of the world, significant attention has been given to the role of the increasing consumption of SSBs, as these beverages are often a primary source of free sugars. The World Health Organization (WHO) defines "free sugars" as monosaccharides (e.g. glucose, fructose) and disaccharides (e.g. sucrose) added to foods and drinks by the manufacturer, cook or consumer and sugars naturally present in honey, syrups, fruit juices and fruit juice concentrates *(2)*. Consumption of free sugars can contribute to unhealthy weight gain and dental caries, and SSB taxes can play an important role in curbing this consumption. Empirical evidence suggests that SSB taxes are an effective intervention to reduce consumption SSBs. This in turn may reduce associated diet-related NCDs. For these reasons WHO has added SSB taxation to the menu of recommended policy options to prevent and control NCDs and to the menu of priority policy measures to address childhood obesity *(3)*.

This chapter provides an overview of the health and economic consequences of SSB overconsumption, a summary of the economic case for excise taxes, a synopsis of countries that already implement SSB taxes, and global commitments related to SSB taxes.

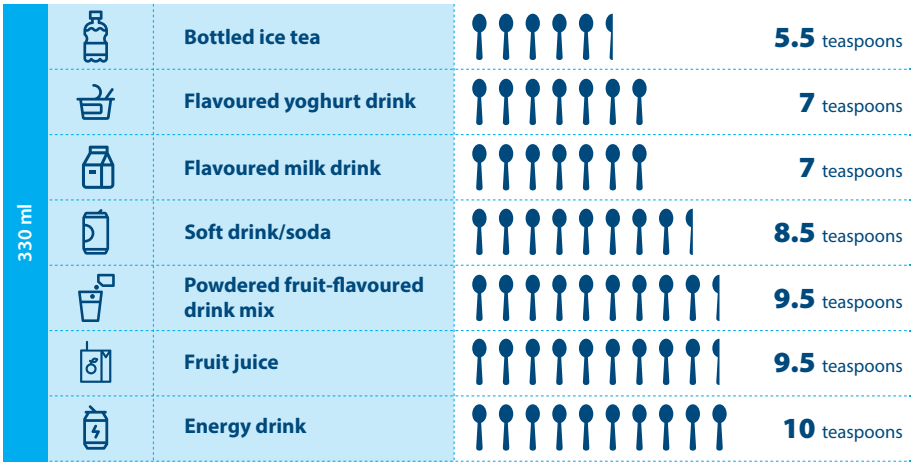
1.1 BACKGROUND

1.1.1 WHAT ARE SSBs?

SSBs are non-alcoholic beverages containing sugars *(4)*. SSBs comprise a broad range of beverages including carbonated soft drinks, juices and nectars, flavoured milks and other dairy drinkable products, sweetened plant-based milk substitutes, energy drinks, vitamin waters, sweetened iced teas and concentrates. SSBs are defined by WHO as "all types of beverages containing free sugars, and these include carbonated or non-carbonated soft drinks, fruit/vegetable juices and drinks, liquid and powder concentrates, flavoured water, energy and sports drinks, ready-to-drink tea, ready-to-drink coffee and flavoured milk drinks"*(5)*. Free sugars are defined by WHO as "monosaccharides and disaccharides added to foods and beverages by the manufacturer, cook or consumer and sugars naturally present in honey, syrups, fruit juices and fruit juice concentrates" *(2)*. See Box 1.1 for definitions of different types of sugars.

SSBs are widely available and heavily promoted in the food environment, so they are very easy to overconsume, and SSBs can greatly contribute to the overconsumption of sugars. The intake of free sugars, particularly in the form of SSBs, can increase overall energy intake and may reduce the intake of foods containing more nutritionally beneficial calories. SSBs have no nutritional benefits and are neither an essential nor desirable part of people's diets. For example, a single can of a carbonated soft drink on average contains 40 grams of free sugars (roughly the equivalent of 10 teaspoons of table sugar), while WHO guidelines recommend that adults and children reduce their consumption of free sugars to less than 10% of their daily energy intake (equivalent to roughly 12 teaspoons of table sugar for adults with a diet of 2000 kcal, and 9 teaspoons for children with a diet of 1500 kcal) *(5)*. It is important to note that sugar content can vary by beverage and by country, and that some fruit juices may have more free sugars than some carbonated soft drinks. See Figure 1.1 for examples of sugar content by beverage. High intake of any free sugars, including those present in SSBs, can pose a health risk. Moreover, there is no evidence that reducing intake of free sugars causes harm.

Fig. 1.1 Typical sugar content of drinks



Source: Own elaboration based on *(6)*

Excess consumption of free sugars is linked to a variety of diseases and adverse health conditions (described in more detail in the following section), which are regrettably increasing in prevalence in many countries *(7-10)*. Fortunately, there is evidence-based actions that governments can take to influence the creation of food environments that enable consumers to make healthier choices and consume less sugars. One major government intervention to reduce such consumption is taxation of SSBs. Taxation is made more effective when implemented as part of a comprehensive policy package that also includes other demand reduction measures such as the restriction of marketing of SSBs; regulation of their labels, for example to include warnings; banning the use of health and nutrition claims, as well as other persuasive elements such as images of fresh and natural foods, cartoon characters; banning SSBs from schools and other settings; as well as providing education about nutrition and healthy dietary practices.

Box 1.1 Definitions for different types of sugars

Added sugars: Added sugars include those added to foods and beverages during processing or preparation. This includes sugars for example, table sugar as well as sugars from honey, molasses, and fruit or vegetable juices and juice concentrates, high-fructose corn syrup, malt syrup, agave syrup, and any other free sugars added to processing or preparation.

Free sugars: Free sugars include sugars added to foods and beverages by the manufacturer, cook or consumer, as well as sugars naturally present in honey, syrups, fruit juices and fruit juice concentrates. Free sugars do not include sugars naturally occurring from milk (lactose and galactose) nor intrinsic sugars (such as those sugars incorporated within the structure of intact fruits and vegetables).

Total sugars: Total sugars include sugars from all sources. This includes added sugars, sugars from milk, and intrinsic sugars.

1.1.2 THE GROWING HEALTH BURDEN OF SSB CONSUMPTION

There is robust evidence associating the consumption of SSBs with a growing global burden of obesity and other associated diseases *(11, 12)*. In particular, increased intake of SSBs is associated with increased risk of dental caries, type 2 diabetes mellitus and excess weight and obesity, which in turn increase the risk of heart disease, stroke, other cardiometabolic conditions and some cancers *(13-22)*. These conditions inflict considerable burdens on individuals and societies as they increase health care costs, cause lost wages and reduced productivity due to disability and illness, and adversely affect general well-being and individual quality of life. Although the direct costs attributable to excess SSB consumption have not been evaluated, the estimated costs attributable to excess SSB suggest that these costs can be substantial. For example, a study from Korea estimates that in 2015, the socioeconomic costs of deaths attributable to SSB overconsumption was about 39 billion won (US$33 million), while the cost of diseases attributable to SSB overconsumption exceeded 590 billion won (US$503 million) *(23)*.

Global evidence on the economic costs of diseases associated with excess SSB consumption supports the notion that the costs associated with excess SSB consumption may be substantial. For example, more than 4.5 million people die each year from obesity or being overweight. The total direct cost of high body mass index (BMI) to health services globally is US$ 990 billion per year (more than 13% of all health care expenditure), and the total annual economic impact of obesity (including

health care costs, loss of productive life years and investment to mitigate the cost) is estimated at US$ 2 trillion (nearly 3% of global gross domestic product) *(24-26)*. Similarly, 1.5 million people die each year from diabetes, which has an estimated annual global cost of US$ 1.31 trillion *(27, 28)*. Lastly, dental disease treatment consumes 5–10% of health care budgets in high-income countries (HICs) and would exceed the entirety of financial resources available for the health care of children in most low- and middle-income countries (LMICs) *(29)*.

A variety of mechanisms may be responsible for the associations between SSB consumption and adverse health outcomes, with some links better established than others *(30)*. Intake of free sugars, including through SSBs, increases overall energy intake and can lead to weight gain and an increased risk of NCDs *(14, 15, 17, 31, 32)*. Evidence shows that individuals who consume SSBs do not compensate for the added calories by eating less food, which leads to weight gain and obesity *(33)*. The intake of free sugars can also influence the risk of NCDs independently from their impact on body weight, for example by influencing blood pressure and serum lipids *(34)*. Another concern is the association between intake of free sugars and dental caries *(35-39)*.

Unfortunately, consumption of SSBs, along with associated health conditions, has risen in LMICs, where consumption has grown at a rate 6.6% *(40)*. Moreover, the rise in consumption of SSBs has coincided with significant increases in the affordability (price relative to income) of these products *(5, 41, 42)*. More specifically, increased affordability has been identified as a major driver of SSB purchasing behaviours and is significantly associated with the prevalence rates of both excess weight and obesity *(42)*. As SSBs are nonessential products that impose a high and growing health burden — and taxes are a tool to decrease affordability — there has been increasing interest in taxing these health-harming products to decrease their purchase and consumption as well as the associated health burden.

1.2 RATIONALE FOR SSB TAXES

There are several reasons to tax unhealthy products like SSBs. This subsection explains both the public health and economic rationales. While the public health case hinges on the negative health burden caused by SSBs and the nonessential nature of these health-harming products, the economic rationale is based on the market failures present in the SSB market.

1.2.1 PUBLIC HEALTH RATIONALE FOR TAXING SSBs

Compared to other food products that contain free sugars, SSBs are an appealing category of products to target for several reasons. First, in many countries SSBs are among the leading sources of free sugars, and they contain little-to-no added

nutritional value *(43-50)*. They are not essential to an individual's diet and can displace consumption of other healthier alternatives such as water and milk. Second, evidence indicates that individuals who consume SSBs do not compensate for the added calories by eating less food, which leads to weight gain and obesity. Third, epidemiological studies suggest that added sugars in liquid form, such as SSBs, may pose greater health risks, including the risk of metabolic syndrome, compared to sugar-containing solid foods *(51, 52)*.

Beyond the health benefits associated with decreased SSB consumption and an improved food environment, SSB taxes also raise revenue. This can be used to support the general functioning of the state or can be earmarked (hypothecated or ring-fenced) and used to fund subsidies for healthier food and beverage options. It is important to note that SSB taxes can contribute greatly to the reduction of sugars consumption when implemented as part of a comprehensive strategy in conjunction with other policies and interventions to improve diets. Revenue from SSB taxes can even be used to advance these other public health initiatives to improve diets, as is done in French Polynesia and Hungary *(53-55)*. The revenue from SSB taxes can help advance other policies that promote healthy food environments and healthy diets for all. Examples include subsidizing fruits and vegetables for low-income populations; subsidizing healthy meals in schools; developing school policies and programmes that encourage children to adopt and maintain a healthy diet; communication campaigns to educate about nutrition and healthy dietary practice; and providing nutrition and dietary counselling at primary health-care facilities.

The public health rationale for SSBs taxes, even in countries with low SSB consumption, is thus to promote healthy diets and improve the nutrition of individuals, which will contribute to preventing disease and improving population health. Countries with low SSB consumption may be considered by industry as growth markets such that, in the absence of policy interventions, they could be subjected to strong marketing that may increase consumption *(56)*.

1.2.2 ECONOMIC RATIONALE FOR TAXING SSBs

Traditional economic theory holds that government intervention may be merited if market failures deliver outcomes that do not maximize social efficiency. The SSB market has many market failures, including several negative externalities and internalities. The economic case for SSB taxation is drawn from these market failures and the potential for appropriate taxation policies to internalize the associated costs, recuperate losses and reduce consumption.

Negative externalities are costs that are not borne by the consumer or producer of the product but by others in society, or society at large. For example, pollution from factories is not reflected in market prices. Without facing the true social cost

of polluting, factories will produce more pollution than is socially efficient, leading to a market failure. In the case of SSBs, these negative externalities include lost productivity associated with diet-related NCDs and the financial costs of treating diseases associated with SSB consumption (as detailed in section 1.1.2) in countries where health care is publicly funded *(30, 57-59)*. The market price consumers pay for SSBs does not reflect this true cost to society and results in overconsumption of SSBs from a societal perspective. Taxation of SSBs provides a mechanism to reduce overconsumption and correct these externalities, transferring the social costs onto the consumer or producer rather than society at large.

Internalities arise when individuals do not fully consider or account for the cost on their futures of their current behaviour, for example the decision to consume SSBs daily. While individuals may obtain benefits from current consumption in the short term, the long-term effects of these latent internalities result in net losses. For example, the NCDs and health conditions associated with SSB consumption are not realized immediately but only once a disease has developed, often many years after the consumption of a harmful product. Failure to properly account for future costs may arise when the risks of consumption or the addictive nature of some products (such as alcohol and tobacco) are poorly understood, which may be exacerbated by extensive marketing of products to raise the perceived benefits of consumption. Similarly, as in the case of negative externalities, this failure to account for future self-imposed costs may lead individuals to overconsume a given product. Children and adolescents are particularly susceptible to choosing immediate gratification despite future net losses *(30)*. Price changes induced by taxes can allow individuals to more accurately incorporate these internality costs into their decision-making *(60-62)*.

Thus, the economic rationale for applying a tax on SSBs is that overconsumption occurs because the full cost of consumption is not accounted for in the market price (i.e., internalities and negative externalities are present). Well-structured taxes are a tool that can be used by governments on targeted products to correct for such negative externalities and internalities — the costs of which are not accounted for in market prices — and reduce the overconsumption of SSBs from a societal perspective. These types of taxes, which specifically charge consumers of such products (or producers) for unaccounted negative effects imposed on society, are used to correct for market failures and internalize the costs (i.e., ensure that the market price reflects the total social cost) by raising the market price. In theory, internalizing the full costs and raising the market price should reduce consumption of the taxed product to socially optimal levels. This type of tax, which seeks to internalize costs to achieve socially optimal levels of consumption, is known as a Pigouvian tax *(63)*. The use of excise taxes to correct market failures caused by negative externalities is widely accepted. For instance, most countries in the Organisation for Economic Co-operation and

Development (OECD) use taxes to reduce car pollution emissions *(64)*. Pigouvian taxes are thus a tool that can be used to improve behaviour, including discouraging the consumption of SSBs.

1.2.3 HOW EXCISE TAXES INFLUENCE BEHAVIOUR

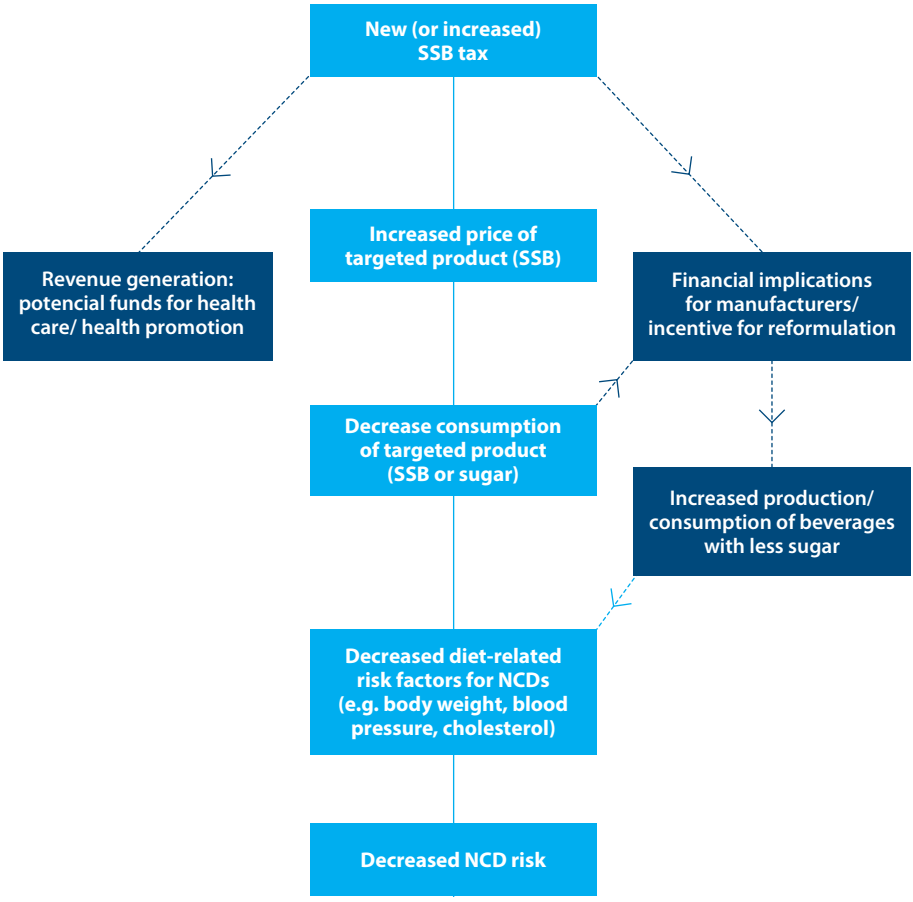
Taxes on particular products can increase producers' marketing costs. Producers can respond to this in a number of ways. First, this increased cost can be recouped by passing it onto consumers through higher prices on the taxed product. While many factors influence diet, the price of food products (including SSBs) is a key determinant – so much so that as price increases, consumption decreases *(58, 65-69)*. Thus, all else being equal (*ceteris paribus*), a tax on a targeted product will be reflected in a higher price faced by the consumer, thereby decreasing affordability and reducing overall consumption.

Of note, these changes in consumer behaviour can create incentives for producers to change their product portfolio away from the taxed product. If taxes on beverages are levied according to the sugar content, they can also encourage producers to reformulate these products and shift resources away from the taxed substance towards less unhealthy products. This has been seen in South Africa, where SSBs are taxed at 0.021 rand (US$ 0.0015) per gram of sugar above a particular threshold, in the United Kingdom, where SSBs are taxed according to sugar content per 100 mL, and in Portugal where SSB are also taxed according to sugar content per litre *(53, 54, 70-74)*. Because of the widespread overconsumption of free sugars, even small changes in dietary behaviour can lead to large reductions in population-level morbidity and mortality, as well as the associated costs to society, the environment and the economy *(75-80)*. These pathways from tax to NCD risk are highlighted in Figure 1.2 on the next page.

1.2.4 USE OF SSB TAXES AROUND THE WORLD

Over the past several decades, as evidence on the health consequences of excess free sugars consumption has accumulated (as described in section 1.1.2), governments have begun to use SSB taxes to promote public health by reducing consumption of SSBs, which can contribute to increased consumption of free sugars. A growing body of evidence — demonstrating that higher taxes, by increasing prices, lead to reductions in SSB consumption with relatively larger impacts on vulnerable populations such as young people and the poor — has led many governments to adopt and increase SSB taxes with the stated intention of reducing sugar consumption.

Fig. 1.2 How SSB taxes can lead to lower risk of NCDs

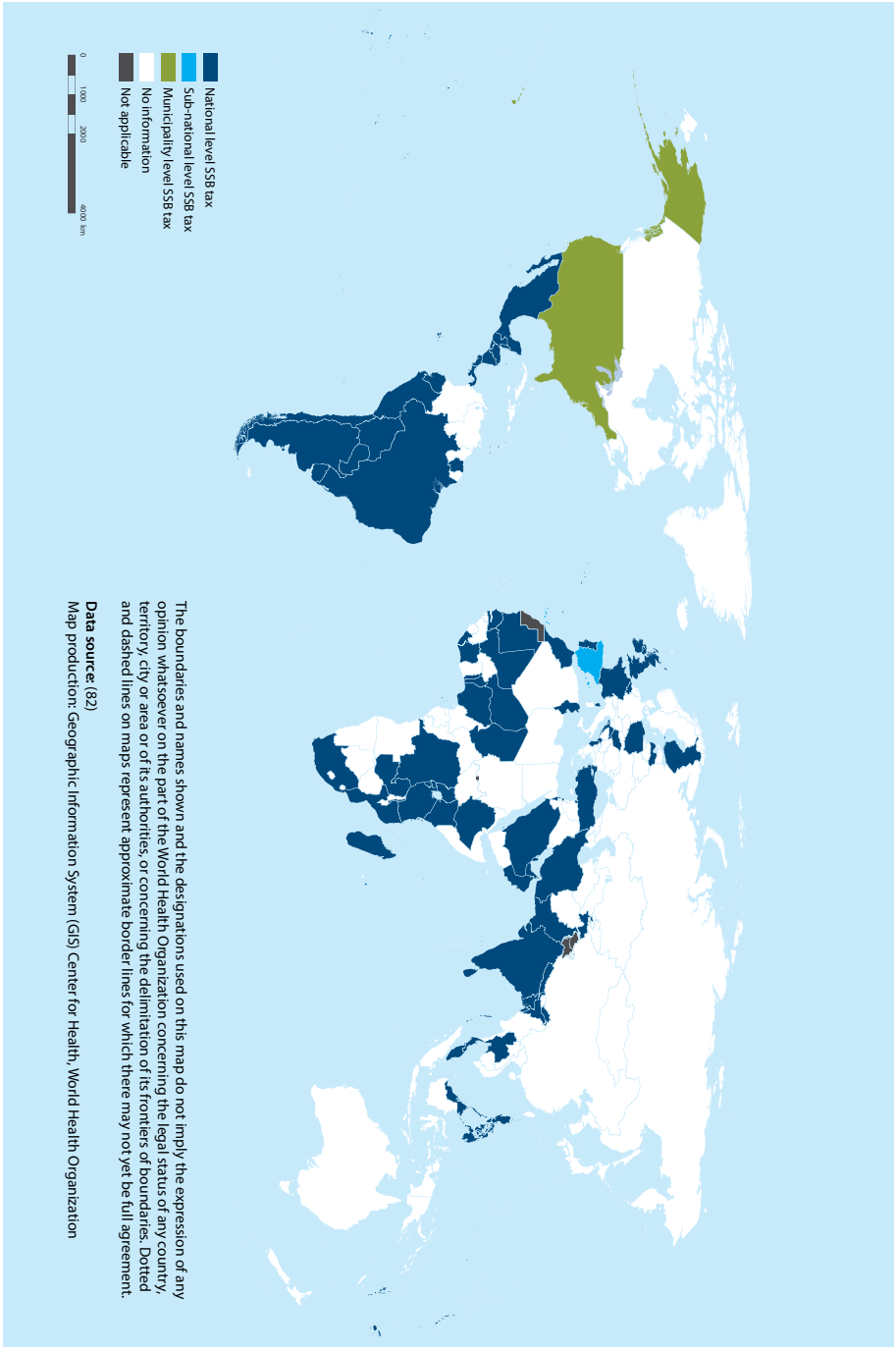


Source: Authors' elaboration based on *Fiscal policies for diet and prevention of noncommunicable diseases (81)*

As of May 2022, more than 85 countries (at national or subnational levels) have levied taxes that apply to SSBs (Figure 1.3), according to the WHO Global database on the Implementation of Nutrition Action (GINA) *(82)*.[1] As will be explored in further detail in Chapter 4, there is a high diversity in the design of existing excise taxes on SSBs, and there is ample space to adjust their design to further improve their impact on health *(83)*. The momentum for implementing taxes on SSB has been growing in recent years. As adoption of taxes on SSBs grows globally, the evidence base, lessons learned, and best practice continue to become more robust.

1 There may be other taxes not captured in GINA. In addition, note that the number of countries applying national or subnational level taxes on SSBs is frequently changing given their increasing use.

Fig. 1.3 SSB taxes, by country, May 2022



Source: *(82)*

1.2.5 GLOBAL COMMITMENTS RELATED TO SSB TAXES

Over the past several decades, multiple global commitments have been made to use fiscal policies to improve diets (see Box 1.2). For example, in 2018, the United Nations General Assembly adopted an updated political declaration on NCDs, which calls for the "implementation of appropriate fiscal measures to address NCD risk factors and promote healthy diets and lifestyles" *(84)*.

Similarly, WHO Member States have endorsed a series of mandates, action plans and strategies for reducing NCDs and promoting healthier diets that specifically call for the introduction of taxes. In May 2013, the Sixty-sixth World Health Assembly adopted the Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013-2020 (which has since been extended through to 2030) along with nine voluntary global targets, including a 25% relative reduction in NCD mortality by 2025, a 30% relative reduction in mean population intake of sodium and halting the rise of diabetes and obesity *(85, 86)*. Under Objective 3 of the Global Action Plan, WHO Member States unanimously supported "considering economic tools that are justified by evidence, and may include taxes and subsidies, that create incentives for behaviours associated with improved health outcomes, improve the affordability and encourage consumption of healthier food and drink products and discourage the consumption of unhealthy options" *(87)*.

Of note, the Global Action Plan also offers a menu of cost-effective policy options for reducing the burden of NCDs (often referred to as Appendix 3). In 2017, Resolution WHA70.11 endorsed the updated Appendix 3, which includes "effective taxation on sugar-sweetened beverages" *(88)*. SSB taxation was included in the Updated Appendix 3 on the grounds that it was found to be cost-effective with ≥ I$100 per DALY (disability-adjusted life years) averted in low- and middle-income countries. The WHO Director-General's report to the 144th session of the WHO Executive Board (EB144/20) summarizes the evidence for SSB taxation, concluding by advising Member States to continue considering the use of taxation to promote healthy diets *(89)*.

Beyond the Global Action Plan on NCDs, several other global plans and commissions have advocated for the implementation of taxes to improve diets. For example, in 2016 the WHO Commission on Ending Childhood Obesity identified taxing SSBs as a priority measure to address childhood obesity *(90)*. The use of taxes is also advocated as a means of improving diets under Action 3 of the Comprehensive Implementation Plan on Maternal, Infant and Young Child Nutrition 2012 and during the Second International Conference on Nutrition (ICN2) in November 2014 *(91, 92)*.

Lastly, WHO regions have also advanced the call for implementation of taxes to promote healthier diets. For instance, the Pan American Health Organization (PAHO)/WHO Regional Office of the Americas adopted the Plan of Action for the

Prevention of Obesity in Children and Adolescents in 2014, which calls for "the implementation of fiscal policies, such as taxes on SSBs and energy-dense, nutrient-poor products," and in 2021 they published *Sugar-sweetened beverage taxation in the Region of the Americas*, a technical reference material intended to provide assistance to policy-makers in the Americas implementing SSB taxes *(93)*. Similarly, in 2014 the WHO Regional Office for Europe published the guidance document *Using price policies to promote healthier diets*, which provides information on the use of fiscal policies to promote healthy diets and explores policy developments from around the WHO European Region *(94)*.

Box 1.2 Calls to action to implement economic measures to improve diets

2004: Global strategy on diet, physical activity and health, approved in 2004 by the Fifty-seventh World Health Assembly.

2011: Political declaration of the high-level Meeting of the General Assembly on the prevention and control of non-communicable diseases held at the United Nations in New York in September 2011.

2013: WHO Global NCD Action Plan for 2013–2020, adopted by the Sixty-sixth World Health Assembly held in May 2013.

2014: Outcome document of the high-level meeting of the General Assembly on the comprehensive review and assessment of the progress achieved in the prevention and control of non-communicable diseases (A/RES/68/300) held in New York in July 2014.

2014: Commitments of the Rome Declaration on Nutrition and recommended actions in the ICN2 Framework for Action, a set of policy options and strategies to promote diversified, safe and healthy diets at all stages of life, adopted by the Second International Conference on Nutrition (ICN2) in 2014 and endorsed by the 136th Session of the WHO Executive Board held in January 2015 and the Sixty-eighth World Health Assembly held in May 2015, which called on Member States to implement the commitments of the Rome Declaration on Nutrition across multiple sectors.

2015: The 2030 Agenda for Sustainable Development and achieving the Sustainable Development Goals, particularly Goal 2 of Zero Hunger.

2016: Report of the Commission on Ending Childhood Obesity, published January 2016 by the high-level commission established by the WHO Director-General in May 2014.

2016: Goals of the United Nations Decade of Action on Nutrition, 2016–2025, declared by the General Assembly in April 2016, which include increased action at the national, regional and global levels in order to achieve the commitments of the Rome Declaration adopted at the Second International Conference on Nutrition, through implementing policy options included in the ICN2 Framework for Action and evidence-informed programme actions.

2017: Updated Appendix 3 of the WHO Global NCD Action Plan for 2013–2030, endorsed in May 2017 by the Seventieth World Health Assembly.

To support these global commitments and inform the use of SSB taxes, other international organizations such as the World Bank, International Monetary Fund (IMF) and the OECD have published reviews of the evidence and country experiences *(59, 95, 96)*.

1.3 PURPOSE AND TARGET AUDIENCE

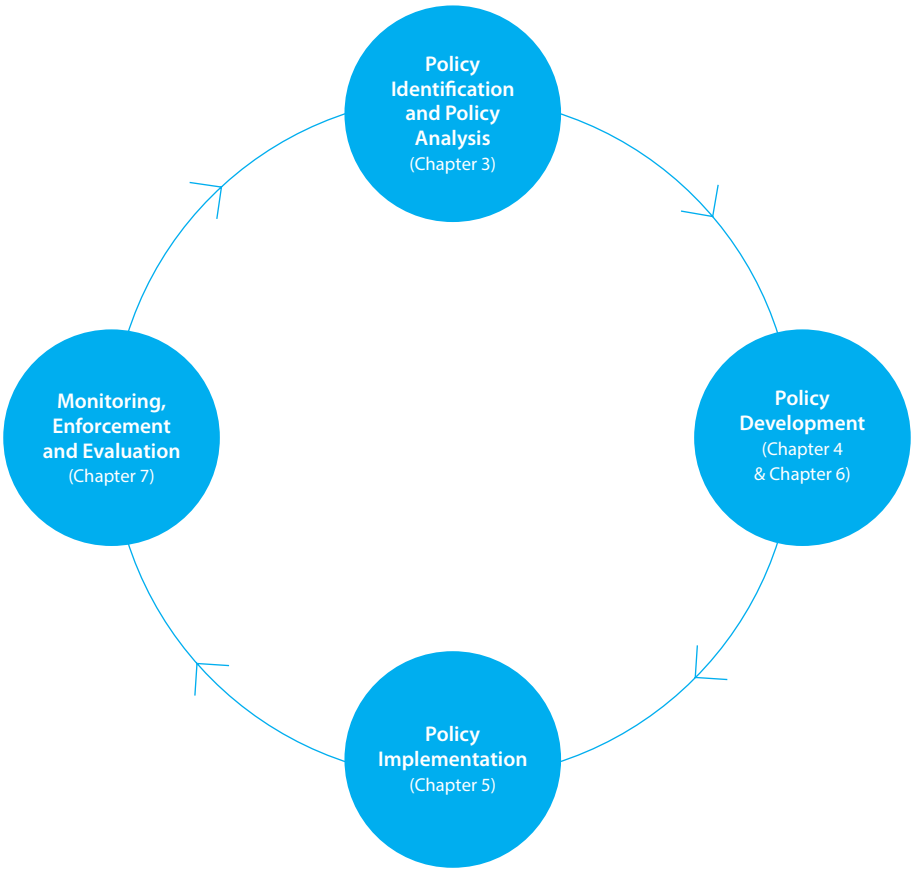
This document is intended to support national policy-makers in health and finance authorities in the enactment of a tax on SSBs. Specifically, it is designed to: explain key economic concepts related to SSB taxation to public health personnel and SSB tax advocates to aid discussions and negotiations with finance ministry officials; and provide ministry of finance officials with relevant country experiences in the implementation of SSB excise taxes, along with key health and economic considerations, strategies and lessons learned from elsewhere for effective SSB tax policy development, design, implementation and administration. More generally, this manual can be used by other stakeholders including civil society organizations and academics interested in engaging with the policy processes associated with the implementation of SSB taxes.

This document provides key considerations and strategies throughout each stage of the policy-cycle development process; from problem identification (defining the goals of the policy), to policy monitoring and evaluation (Figure 1.4 below depicts the policy cycle) *(97)*. The policy cycle is a conceptual framework intended to serve as a reference when developing a new policy or strengthening an existing policy. In real life, the policy cycle is not always linear, and policy-makers may find themselves involved simultaneously in several of the cycle stages or jumping back and forth between stages. Nonetheless, the framework can be a useful analytical tool; by dividing the complexity of the policy-making process into discrete stages,

specific dynamics and intricacies occurring at each stage can be better understood and addressed accordingly.

This manual thus attempts to cover key considerations within each stage of the policy-cycle process as it relates to the development, implementation and monitoring of SSB taxes. Chapter 3 (Building a case for SSB taxes) covers the stages of problem identification and policy analysis. Chapter 4 (Tax policy design) and Chapter 6 (Political economy) cover policy development. Chapter 5 (Tax administration and enforcement) covers the policy implementation stage. Lastly, Chapter 7 (SSB tax policy monitoring) covers the stage of policy monitoring, enforcement and evaluation.

Fig. 1.4 The policy cycle



Source: Authors' elaboration based on *(98)*

1.4 CHAPTER 1 MAIN TAKEAWAYS

- SSBs are nonessential products that contribute to high sugar and energy intakes with limited nutritional value.
- Evidence shows SSB consumption does not satiate individuals, increasing overall energy intake, and can result in weight gain and obesity.
- Robust empirical evidence links SSB consumption to a wide range of diet-related NCDs and health conditions, including (among others): type 2 diabetes, and cardiovascular disease.
- SSBs have become more affordable overtime in many LMICs.
- SSBs impose a series of negative externalities and internalities that are not reflected in the price of SSBs.
- Taxes, which lead to an increase in prices, can change consumption of targeted products, such as SSBs.
- Taxing SSBs is a recommended, evidence-informed policy option to improve food environments and promote healthy diets, and part of the menu of recommended policy options to reduce sugar intake in the WHO Global action plan for the prevention and control of non-communicable diseases.
- SSB taxes increase their price, which in turn makes SSBs less affordable and decreases consumption.
- Countries may also structure taxes on SSBs to encourage reformulation and decrease sugar content in the overall portfolio of beverages.

CHAPTER 2.

Evidence on the impact of SSB taxes

As SSB taxes are increasingly implemented in a variety of countries and settings, there is a growing evidence base documenting changes in prices, purchasing and consumption behaviour as these taxes take effect in real world settings. Recent meta-reviews indicate that well-designed taxation systems targeting nonessential food items, including SSBs, result in positive dietary behavioural changes *(57, 58, 67, 99-102)*. This chapter summarizes the available evidence on the impact of SSB taxes. Specifically, it disaggregates the findings on the impact of SSB taxes on prices, sales/purchases, revenues and health.

2.1 PRICES

Key determinants of the consumption of products such as SSBs are their price and affordability, with affordability measured as the ratio of product price to income. Studies drawing on various data sources document the increasing affordability of SSBs internationally, but particularly in LMICs *(41)*. This trend is accompanied by a strong correlation between increasing affordability and increasing sales of SSBs, documented by Ferretti and Mariani *(42)*. Consequently, a key pathway through which SSB taxes impact product consumption is through the impact on consumer prices.

Taxes impose a charge that producers (and/or importers) must pay to the government, and some producers respond by increasing prices of taxed products to recoup the cost of the tax. Given the central role prices play in consumer responses to tax policies (measured by how much they decrease consumption), the price changes arising from implementation of new taxes or increases in existing taxes have been subjects of significant study. This price impact is typically quantified in proportional terms as the "pass-through rate" of the tax, or in other words how large the price increase is relative to the magnitude of the tax.

An SSB tax can have full pass-through (100% of the tax increase is reflected in the price increase), under-shifting (less than 100% of the tax is reflected) or over-shifting (more than 100% of the tax is reflected). Across settings and within settings, there is variation in pass-through rates arising from differences in local beverage market conditions, consumer income and price sensitivities, and tax design. A recent systematic review and meta-analysis on the effectiveness of fiscal policies, including on SSB taxes around the world found a significant increase in the price of taxed beverages and a pass-through rate of 82% *(102)*.

A study evaluating the impact of the Mexican SSB tax found that the introduction of a one-peso-per-litre tax in 2014, on average coincided with the prices of taxed products increasing by close to one peso per litre, representing a 100% pass-through rate. However, researchers note that the observed pass-through varied by product category and package size. For carbonated SSBs (including soft drinks), where 85% of sales in Mexico are produced by two firms, over-shifting was observed, with prices increasing by more than one peso per litre *(103)*. This is consistent with the economic theory that predicts that, under an oligopoly market, taxes may pass through to prices greater than the amount of the tax *(104)*. On the other hand, for the non-carbonated SSB category (including flavoured water, juices, nectars, etc.) — which has a smaller market share, higher price elasticity of demand and generally higher prices than the carbonated category — an under-shifting of the tax was observed *(68, 103)*. This finding of differential pass-through is consistent with findings from an older study conducted in France, where researchers found a 100% pass-through on carbonated soft drinks, 94% pass-through on fruit drinks and 62% pass-through on flavoured waters. A recent study from Chile also found a 40% pass-through on carbonated high-sugar SSBs and a 78% pass-through on noncarbonated high-sugar SSBs *(105, 106)*.

Lastly, in the Mexican study, observed price increases were larger for smaller package sizes in both product categories studied. Authors hypothesize that this "may reflect producer's strategies to avoid discouraging the consumption of large package beverages that are more penalized by the excise tax" *(103)*. This finding of lower pass-through on higher-volume packages is consistent with a study examining the effect of South Africa's Health Promotion Levy (an SSB tax) on beverage prices, which found almost a 100% pass-through on smaller package sizes but only a 50% pass-through on larger package sizes, as well as a study of the impact of an SSB tax on beverage prices in Seattle, in the United States *(71, 107)*. These differential pass-through rates for larger quantities may be an industry strategy to counteract the objective of the tax, which is to reduce consumption by decreasing affordability.

Another element that may influence the pass-through of an SSB tax is the design of the tax itself. For example, in the United Kingdom the Soft Drinks Industry Levy (SDIL) bases tax liability on beverage sugar content and was explicitly designed to encourage producers to reduce their sugar content without having to increase consumer prices. As such, the levy resulted in significant reformulation and more limited changes in price, especially in the lower-tax category *(108)*.

Overall, there is significant evidence that taxes on SSB products significantly increase prices of the targeted products — although this depends not only on tax design but also market structure, product categories, extent of profit margins and consumer demand for products *(57, 103, 107, 109-115)*.

2.2 SALES AND PURCHASES

Often the behavioural motivation for the implementation of SSB tax policies is to reduce SSB consumption, and consequently free sugar intake and associated health consequences, in the population. As such, changes in SSB consumption, often measured through proxies of sales and purchases, have been a central focus of the literature on SSB taxes. As more SSB tax policies are implemented, there is growing evidence on the effect they have on consumption trends. In general, studies of these policies find that, once they are implemented, purchases of the taxed products fall, while purchases of non-taxed beverages increase or are not meaningfully different.

A recent systematic review and meta-analysis by Andreyeva et al found that a 10% tax on SSBs produces a significant 15.9% reduction in taxed beverage purchases *(102)*. This review adds to the literature on the effectiveness of an SSB tax to reduce purchase of taxed beverages. For example, a meta-analysis by Teng and colleagues finds that across studies, a 10% tax produces a significant 10% reduction in taxed beverage purchases and a non-significant 1.9% increase in non-taxed beverage intake *(101)*. However, underlying this general finding is significant heterogeneity in policies, settings, and estimated effects.

For instance, Colchero et al. find a 6% reduction in SSB purchases following the introduction of Mexico's one-peso-per-litre tax (approximately 10%), while Alsukait et al. find Saudi Arabia's 50% tax on carbonated beverages produced a 35% reduction in sales *(116-118)*. Part of this underlying variability may be attributable to the data and methods available to researchers. There are various approaches these studies take to measure changes in SSB sales and purchases. Many make use of either household data on purchases *(72, 106, 116, 119, 120)* or retailer data on sales *(121)*.

Despite the variation, overall the own-price elasticities of demand for SSBs is generally estimated to be within the range of approximately -0.8 to -1.3 with a mean of approximately -1.0, with high-income country (HIC) studies estimating elasticities of around -0.8 and studies from LMICs estimating similar or greater elasticities *(58, 59, 65, 68, 101, 113, 122-129)*. The recent systematic review and meta-analysis by Andreyeva et al. suggests a higher price elasticity of -1.59 based on effects from 33 studies on 16 tax policies *(102)*. In other words, per the findings in the study by Andreyeva et al., given the average price elasticity of demand value of -1.59, a 10% increase in the price of SSBs would presumably lead to an average reduction in consumption of 15.9%, albeit greater reductions may be expected in LMICS compared to HICs.

Moreover, evidence indicates that consumption, measured through sales and purchases, of targeted items begins to fall within months of implementation, and the effect size has been observed to increase over time *(72, 81, 89, 116, 119, 130-132)*. In other words, evidence indicates that purchases of SSBs are sensitive to changes

in prices and that a tax on SSBs that leads to price increases can be expected to result in changes in purchasing behaviour. It should also be acknowledged that price elasticity is higher among low-income consumers, younger people, people who are overweight and high-volume consumers of SSBs *(119, 125, 133-136)*. In addition to responses to price changes, SSB taxes can also have a signalling effect that discourages purchases, meaning that such taxes can also discourage consumption by raising awareness among the public about the harmful health effects of sugar and SSBs.

Other contextual factors, such as the extent of the jurisdiction in which the policy is being implemented, can be important determinants of behavioural change and of observed price elasticities of demand. For example, in the United States of America a number of local jurisdictions have implemented sales taxes on SSBs; however, as some of these areas may be in close proximity to areas without an SSB tax, cross-border shopping can occur, likely overestimating price elasticity of demand (unless controlling for cross-border shopping) and mitigating the expected impact of a local SSB tax *(137, 138)*.

Of note, in some instances governments have set the tax rate on SSBs relative to the sugar content of the product, to not only encourage consumers to change their purchasing behaviour but also to encourage producers to reduce the sugar content in their products. Countries where this has been done include Portugal, South Africa and the United Kingdom. Typically, in such instances, higher-sugar products face a higher tax liability. The use of this type of sugar-based tax design has been more limited but has typically induced changes not only in quantity of SSBs purchased, but also reductions in quantity of sugar consumed, driven by product reformulation *(139, 140)*.

This means that only looking at changes in the volume of beverages sold or purchased will miss the full extent of the dietary impact of the policy. Rather, it is necessary to account for the impact of both reformulation and consumption changes, and this can be done by looking at sugar intake or the volume of sugar from beverages purchased. For instance, Pell et al. find that in response to the United Kingdom's tiered Soft Drinks Industry Levy (SDIL) — while the volume of households' beverage purchases did not change— the sugar levels of household beverage purchases fell by 29.5 grams per household per week *(140)*. Similarly, in South Africa, with the sugar-based Health Promotion Levy, while the mean per capita daily volume of taxed beverage purchases fell approximately 15%, the mean daily sugar intake from taxed beverages fell 37.5% after the introduction of the policy *(72)*.

2.3 REVENUE

Beyond the dietary impact of tax policies, another potential benefit of SSB taxes is the revenue raised. While not a subject of explicit study, as revenue is typically reported publicly by tax administrations, there have been some efforts to document the revenue raised from SSB tax policies. Revenues from SSB taxes will typically be determined by the extent of the underlying consumption of taxed beverages, how sensitive demand for these products is relative to price and how much of the tax is passed through to consumers and, finally, by the efficiency of tax administration in the particular setting.

Within the first year of implementation, and with significant evidence of product reformulation, the SSB tax in Portugal generated €80 million (US$ 90 million); while in South Africa the Health Promotion Levy generated revenues of 3.2 billion rand (approximately US$ 200 million) within the first two years *(59, 141-143)*. A review of taxes on beverages by the IMF finds that, relative to gross domestic product (GDP), the revenues raised from existing beverage tax policies are small, ranging from between 0.001% and 0.16% of GDP *(95)*.

Table 2.3 Selected examples of tax coverage, rates and revenue- to- GDP

COUNTRY	IMPLEMENTATION YEAR	PRODUCTS SUBJECT TO TAX	RATE	REVENUE (% OF GDP)
Belgium	2016	All soft drinks, including non-alcoholic drinks and water containing added sugar or other sweeteners or flavours	€0.068 (around US$ 0.07) per litre	0.01%
Chile	2014; updated in 2015	All non-alcoholic drinks with added sweeteners including energy drinks and waters	10% (of the retail price excluding VAT) on all SSBs with less than 6.25 g of sugar per 100 mL 18% (of the retail price excluding VAT) on all SSBs with > 6.25 g per 100 mL of sugar	0.07%
Finland	1940; updated in 2011	All non-alcoholic beverages	€0.11 per litre on sugar-free soft drinks and mineral waters €0.22 per litre (US$ 0.25) on sugar-containing soft drinks	0.02%
Mexico	2014	All drinks with added sugar	1 peso per litre (around US$ 0.05, or 10%).	0.1%
South Africa	2018	SSBs (mineral and aerated waters containing added sugar or other sweeteners or flavours and other non-alcoholic beverages) that contain > 4 g per 100 mL	0.021 rand (US$ 0.0015) per gram sugar over 4 g per 100 mL (effective tax rate approximately 12%)	0.06%

Source: Authors' elaboration based on *(59, 95, 144)*

While revenue increases from SSB taxes are a small fraction of GDP, they are not insignificant – particularly when compared to government health expenditures *(145)*. For example, a recent report by the World Bank found that the large financing gap for universal health coverage (UHC) in LMICs could be largely mitigated by tax increases on SSBs, tobacco and alcohol *(146)*. Another study estimated that a one-time excise tax increase that would raise the prices of SSBs by 50% could generate additional revenues of US$ 1.4 trillion ($2016 discounted) worldwide over the next 50 years *(1)*.

Although the magnitude of revenues raised will differ across settings, one common issue of concern is how SSB tax revenue will be used. The earmarking, or hypothecation, of SSB tax revenues for health promotion or NCD-prevention-related activities has been found to increase the acceptability of SSB tax policies to the general public; however, some argue against earmarking on the grounds that it introduces rigidities and inefficiencies into budget processes (more information on this can be found in the political economy chapter) *(147, 148)*.

2.4 HEALTH OUTCOMES

The literature documenting the damage to health from excessive sugar consumption and SSB consumption is significant. Randomized trials, cross-sectional and longitudinal observational studies and systematic reviews of the literature find increasing consumption of SSBs increases risk of obesity, type 2 diabetes mellitus and other metabolic conditions *(13-19)*. In addition, SSB consumption is linked to poor dental health outcomes, including the prevalence of caries and erosion *(149)*.

However, there is a paucity of observational studies on the impact of SSB taxes on health outcomes, largely because of the predictable time lag between implementation of the policy and observable health outcomes at a population level. An apparent exemption to this lag is the case of dental caries, which seem to be responsive to short-term changes in beverage intake. Hernández et al. document significant reductions in the incidence of dental caries among a population in Mexico coinciding with the introduction of the SSB tax and the associated behavioural changes documented in other studies *(150)*. Overall, the paucity of observational studies on the health impact of SSB taxes is largely due to the predictable time lag between implementation of the policy, the development of related diseases that would be outcomes of interest in the evaluation of SSB tax policies (such as overweight and obesity and type 2 diabetes mellitus), and the observability of these health outcomes at a population level. As such, the available evidence on the impact of SSB taxes on health outcomes is derived from simulation studies.

Based on estimates of price elasticity of demand, researchers have sought to estimate what the realized effects of tax policies might be. Researchers essentially

combine findings on the associated changes in SSB purchases resulting from tax and price increases with mathematical models of disease development to simulate what population health impacts may be. Modelling studies that use mathematical structures to simulate changes in behaviour and disease incidence offer evidence that taxes can lead to dietary changes and demonstrate that even small changes to consumption can result in large population-level effects in the medium-to-long term *(76, 80, 99, 151)*. One important limitation in most studies is the inability to fully account for potential substitution effects that could lead to consumption of other untaxed high-calorie food items (such as high-calorie snacks). The issue of potential calorie substitution needs to be better understood, as this may influence the overall health impact of an SSB tax. For example, a study from the United States that incorporates potential substitution effects estimates that a 20% SSB tax would reduce purchases by approximately 10% , but calorie intake would decrease by only 4.8% *(152)*.

Although the specific modelling assumptions, along with limitations of any simulation analysis, should be taken into consideration, the findings from simulation studies indicate that SSB taxes have the potential to improve population health. Available evidence from Mexico on changes in purchases suggest that the reductions affected by SSB taxes translate to 5 to 22 kilocalories (kcals) per capita per day *(153)*. Sufficiently large reductions in consumption could produce important health results in a medium-to long term horizon. For instance, Barrientos-Gutierrez et al. simulate the impact of the one-peso SSB tax in Mexico on changes in the incidence of obesity and diabetes and estimate a relative reduction of 2.45% in obesity prevalence and 89 000–136 000 fewer cases of diabetes over a 10-year period *(151)*. A similar study from Portugal estimates that, given the observed reductions in purchases along with reductions in content of sugar in SSBs (achieved through reformulation), in the medium term the tax-related reduction in sugar consumption will prevent around 40–78 new cases of obesity every year, with the biggest projected impact observed in adolescents from 10—18 years *(154)*. Another recent study exploring the potential health impact of excise tax increases on health outcomes globally estimates that a one-time excise tax increase that would lead to increases in prices of SSBs by 50% could avert 2.2 million premature deaths worldwide over the next 50 years *(1)*.

2.5 CHAPTER 2 MAIN TAKEAWAYS

- The effect of an SSB tax on consumption (often measured through the proxies of sales and purchases) in the short-term hinges on the price elasticity of demand (how sensitive consumers are to higher prices) and the "pass-through" of the tax.
- Overall, evidence indicates that the own-price elasticity of SSBs usually ranges between -0.8 and -1.3. Meaning that a 10% increase in the price of SSBs would presumably lead to a reduction in purchases between 8% and 13%.
- The effect of an SSB tax on prices faced by consumers also hinges on the "pass-through rate," which may vary depending on product and market characteristics.
- While revenue increases from SSB taxes are a small fraction of GDP, they are not trivial—particularly when implemented jointly with taxation of other health harming products such as tobacco and alcoholic beverages. Country experiences show consistent revenue gains following the implementation of these taxes.
- There is a paucity of observational studies on the health impact of SSB taxes, largely because of the predictable time lag between implementation of the policy and observable health outcomes at a population level. However, simulation studies indicate that health gains could be substantial.
- There is significant untapped potential for SSB taxes: a one-time increase that would result in price increases of 50% globally would result in 2.2 million averted premature deaths and US$ 1.4 trillion ($2016 discounted) in additional tax revenues over the next 50 years.

CHAPTER 3.

Building a case for taxing SSBs

The use of excise taxes to achieve policy objectives, including social and health objectives, is not unusual. Taxing SSBs can be an effective policy to promote healthier diets and improve population health and does not represent a sharp departure from current international practice. However, it is important to note that the competency to tax is beyond the traditional scope of health authorities and generally lies within the scope of finance authorities — whose rationales, motivations and objectives often differ from those of health authorities. Developing and implementing an effective SSB tax requires close dialogue and collaboration between health and finance ministries, therefore a robust case for taxing SSBs will have to resonate with both finance and health authorities.

Excess sugar consumption and its related costs to health, economic development and environmental degradation are well described in academic literature, but they manifest differently in each country *(14-18, 30, 155-159)*. A strong evidence base, including national data to support the health and economic rationales for action, has been shown to increase the feasibility of policy development and implementation. Quantifying excess sugar consumption with reference to WHO or national sugar guidelines provides the basic rationale for taxation of those added-sugar products. Likewise, quantifying the consumption of SSBs, the health outcomes related to their overconsumption and associated treatment costs, along with other economic issues related to a diet high in excess sugar, can be instrumental in strengthening the evidence base and countering industry interference. Part of this chapter is aimed at assisting policy-makers in identifying key questions that can help strengthen the evidence base to support the implementation of SSB taxes from both health and economic perspectives.

Skilfully formulated policy justifications, however, are not always enough to get a policy enacted — especially when it comes to taxation policies. Political processes and external stakeholders (along with associated power relations) are just some of the other factors that play a role in the success or failure of policy interventions and their implementation. This chapter also considers the importance of conducting a stakeholder assessment, considering both the technical and political feasibility of enacting a tax on SSBs, building coalitions of support and anticipating opposition. Together, the elements presented here can provide a common reference point for the planning process and help policy-makers to prioritize actions.

3.1 SITUATIONAL ANALYSIS

A situational analysis is ideally the first step in the development and execution of a realistic plan to implement SSB taxes. Situational analysis involves a systematic collection and analysis of health, social, demographic, economic and political information in order to more thoroughly understand the context in which an SSB tax would be implemented. A detailed situational analysis can not only help substantiate the case for the tax, but will also identify potential opportunities as well as challenges or risks that may be faced in the process of developing and executing an SSB plan.

This subsection provides some guidance on key areas to consider as part of a situational assessment for the implementation of SSB taxes, including the burden of disease from NCDs associated with excess sugar consumption, the estimated economic toll of excess sugar consumption at the national level, a stakeholder assessment to understand the motivation and influence levels of interested parties, and existing or potential complementary nutrition policy interventions.

3.1.1 HEALTH BURDEN OF SSBs

The health rationale for taxes is clear. SSBs:

- are associated with myriad diseases including increased risk for obesity and diabetes;
- are nonessential and have little to no additional nutritional value;
- contain calories consumed in liquid form and may increase overall consumption of calories;
- are straightforward to identify by sugar level, regardless of the availability of nutrient profiles, and thus feasible targets for taxation with a minimal associated administrative burden;
- taxes are effective in reducing consumption and an important component of a comprehensive NCD reduction and control strategy; and
- countries with low SSB consumption may be considered by industry as growth markets such that, in the absence of policy interventions, they could be subjected to strong marketing that may increase consumption.

Where technical capacity and relevant data are available, combining this health rationale with additional country-specific data will help strengthen the case and may safeguard prospective SSB tax policies against industry attacks. For example, if it is possible to take stock of excess sugar consumption, the trends in diseases related to excess sugar consumption and the specific contribution of SSBs to excess sugar consumption in a given country, these data will certainly make for a stronger and better-targeted case. Of note, although having country-specific information would

be instrumental in substantiating the case for excise taxes from a health perspective, not having country-specific information should not inhibit action. Where country-specific data are not available, meta-analyses and international information may also be used as a substitute.

Gathering empirical country evidence or international evidence, where technical capacity and data resources allow, will strengthen the case for an SSB tax. To build an evidence base to support the health case for an SSB tax in a given country, the following questions are key.

- What is the evidence of the trends in SSB sales or purchases?
- At a population level, is there an observed trend in excess sugar consumption compared to national guidelines, where available or global guidelines?
- What are the observed dietary patterns related to excess sugar consumption? Is there evidence that particular foods or beverages may be leading causes of excess sugar consumption?
- Are there existing national dietary guidelines, including food-based dietary guidelines related to sugars? How does the amount of sugars in SSBs compare to these and/or WHO guidelines?
- What are the country trends in NCDs associated with excess sugar consumption? Are these diseases on the rise? In other words, are diseases associated with excess sugar consumption, including dental caries, a concern or a growing cause for concern?

Gathering data to answer these questions will help determine: if excess sugar — according to either global or national dietary guidelines — is a cause for concern in a given country or context, based on observed disease and sugar intake trends; and if SSBs in particular are, or are projected to be, an important source of excess sugar consumption. Table 3.1 suggests some key pieces of information that could be used to build an accurate picture of the national situation as a baseline upon which to measure any future progress. Items listed under the "priority data" column are the most fundamental to making the case for an SSB tax and measuring progress. In countries where the data and technical capacity exist, the items in the "advanced data" column will make for a much more robust case. Where the capacity does not yet exist, these advanced topics can be considered as potential areas for future research.

Table 3.1 Information guidelines for establishing a national baseline

	PRIORITY DATA	ADVANCED DATA
Health	• Trends in prevalence, incidence, morbidity and mortality from diet-related diseases, including overweight and obesity, type 2 diabetes and dental caries	• Diet-attributable burden of disease* • Burden of disease related to sugar or SSBs*
SSB consumption	• Average daily consumption (mL and calories) of SSBs by beverage type • Trends in average daily energy intake • Average daily intake (calories/volume/weight) of added and total sugar • Average SSB price per litre by package size and type of beverage	• Percentage of calories derived from free sugars in potential target items • Dominant SSB products and trends as percentage of sales or consumption • Health consciousness in food and drink purchasing* • Cultural values attached to food and drink*

* These data may not be readily available from mainstream sources for all countries or settings.

If data are available regarding sales and consumption, nutrition and health outcomes, disease rates and other factors cited in Table 3.1, these can help identify which foods are consumed and their contribution to the intake of free sugars in the diet. To calculate specific foods' contribution to free sugar intake, food consumption can be compared with national dietary guidelines, nutrient profiling systems that assess the healthfulness of the food or beverage, and WHO guidelines on nutrients associated with NCDs — in particular, free sugars *(2, 160, 161)*.

For instance, the WHO guideline on sugar intake recommends limiting free sugars to 10% of daily energy intake to prevent and control obesity and tooth decay. For additional health benefits, the WHO guideline suggests a further reduction to below 5% of daily energy, which is equivalent to six teaspoons of sugar for adults and even less sugar for children. To put this in perspective, one small 250 mL can of a regular SSB alone can exceed this limit for both adults and children *(2)*. In countries such as Mexico, where the primary source of free sugar consumption is SSBs, they are an obvious target for taxation. SSB taxation may also be an appealing preventive intervention even in countries where they are not the primary source of free sugar intake.

More advanced analyses use complex modelling to determine which specific foods and beverages are the greatest sources of DALYs and which population groups consume the most of these products. DALYs are a measure of overall disease burden that is expressed as the number of years lost due to ill health, disability or early death. This type of modelling can also help further substantiate the case for taxing SSBs by quantifying the disease burden attributable to these products. During the policy development process, using this type of modelling to identify potential gains to DALYs from a tax can also provide strong evidence to support the implementation of an SSB tax.

In some countries, the data required to understand the current national situation, and to conduct the analysis described above, are routinely collected by a number of different agencies or may be available in the academic literature. Whenever possible, it is recommended to rely not only on average population data but to stratify data by age, sex, socioeconomic status, region and BMI.

Low- and middle-income countries are undergoing a nutrition transition, where they are seeing a steady increase in consumption of foods high in fats, sugars and salt, which are typically heavily processed. For this reason, it is also important to assess the health outcome trends of dietary patterns and make projections of future consumption of foods high in fats, sugars and salt. Unfortunately, not all data are available in every setting; while high-income countries may have robust and detailed data systems, this is not necessarily the case in LMICs. More information on potential sources of data is provided in Annex 1.

The findings from both types of analysis mentioned above — comparison with dietary guidelines and disease modelling — can help strengthen the case for introducing an SSB tax policy aimed at improving population health through decreasing consumption of free sugars, or avoiding an increase. They can also help to quantify excess sugar consumption and related health outcomes (i.e., diseases associated with diets high in sugar) to enable a better understanding of the main country-specific health issues related to a diet with high levels of excess sugar. If the policy is implemented, these data will be especially relevant when evaluating the SSB tax policy. Overall, understanding these patterns and quantifying the adverse health consequences of excess sugar consumption can be instrumental components for advancing the use of population-level policies such as SSB taxation to curb the consumption of sugar in addition to identifying which products to target.

3.1.2 ECONOMIC BURDEN OF SSBs

While health authorities may be convinced of the need to pursue an SSB tax purely on the basis of the health burden, ministries of finance and economic affairs may be more receptive to a rationale that focuses on the economic arguments. In addition to the generic economic justification for SSB taxes provided in section 1.2.2, there are other data points (for example the productivity losses or projected health care costs associated with excess free sugar consumption) that may compel finance authorities to further explore an SSB tax policy. The analyses required to produce these data points are relatively complex, however, and they may require both sufficient technical capacity and data resources such that they may not be feasible in all settings. Again, the absence of these data points should not inhibit action. Where country-specific data are not available, meta-analyses and international information may also be used as a substitute.

In countries where sufficient data and technical capacity exist, key questions for building an evidence base using empirical country evidence to support the economic case for an SSB tax include the following:

- What is the associated economic cost to society of excess free sugar consumption? What is the cost of SSBs specifically? Such costs can be measured in terms of health care expenses, for example, or productivity losses due to morbidity or mortality.
- What share of the social cost is borne by the government? For example, if there is a publicly funded health care system, what is the financial cost to government of treating diseases associated with SSB consumption or diet-related NCDs?

Since implementing taxation policies lies within the competency of finance authorities, it is essential to have data that resonate with their concerns and priorities. When health authorities gain a deeper understanding of the economic issues related to a diet high in excess sugar, this will help to persuade fiscal authorities to consider implementing an SSB tax. From the economic perspective, it is particularly important to estimate the potential impact of the proposed SSB tax on revenue, prices and production (find more information on assessing the potential impact in section 3.2.1). Additional information on cost-effectiveness would also be useful, particularly as it relates to other non-price policies. Lastly, economic data on estimated net employment effects of the tax measure will help to counteract industry opposition (described later in this chapter).

It should be noted that most of these data are not readily available in most countries and that advanced technical expertise is likely needed to obtain reliable estimates. Building coalitions with civil society and academia can be instrumental in conducting these economic analyses that will make the case for SSB taxation more compelling to national finance authorities. While country-specific data are undeniably more compelling to local authorities, in cases where local data are not available nor feasible to develop, international evidence, evaluations or simulation studies may also be used. Although this type of information can help strengthen a case for implementing SSB taxes from the perspective of finance authorities, as well as safeguard against potential industry attacks, its absence should not inhibit efforts to move forward with an SSB tax policy.

3.1.3 ASSESSMENT OF COMPLEMENTARY INTERVENTIONS

As described earlier, SSB taxes are considered an effective policy option for reducing sugars consumption and promoting healthier diets. Several global commitments and strategies have endorsed their use, and the forthcoming WHO guideline on fiscal policies also recommends taxation of SSBs *(3, 86)*.When considering the implementation of a food or beverage tax, it is important to review the status of complementary measures and to reflect on how taxation fits with the existing policies that also promote healthy food environments and enable healthy diets for all. Price is one of the drivers of food-related behaviours. Although evidence shows that SSB taxes compare favourably with other complementary measures in terms of cost-effectiveness and impact on high-risk groups, these policies should be implemented in combination with a myriad of other measures to improve food environments *(162, 163)*. Complementary policies include those related to nutrition labelling, protecting children from harmful marketing of food and beverages, ensuring nutritious foods are served in schools and other public spaces, and encouraging reformulation towards lower levels of salt, sugars and harmful fats (*164*). Box 3.1 describes how each of these policy options contributes to healthier food environments. Similarly, Figure 3.1 shows a schematic model of how these complementary policy options impact food environments, consumer behaviours, healthier diets, and improved human health.

Box 3.1 Complimentary policy options in the food environment

Policies to protect children from harmful food marketing. Food marketing to which children are exposed can shape food preferences and promote unhealthy dietary patterns that can later contribute to overweight or obesity, along with other diet related NCDs.

Nutrition labelling policies. In addition to nutrient declarations on the back of food packages, front-of-pack nutrition labelling (FOPL) can further support consumers to make informed decisions. FOPL can also encourage food companies to reformulate towards healthier products.

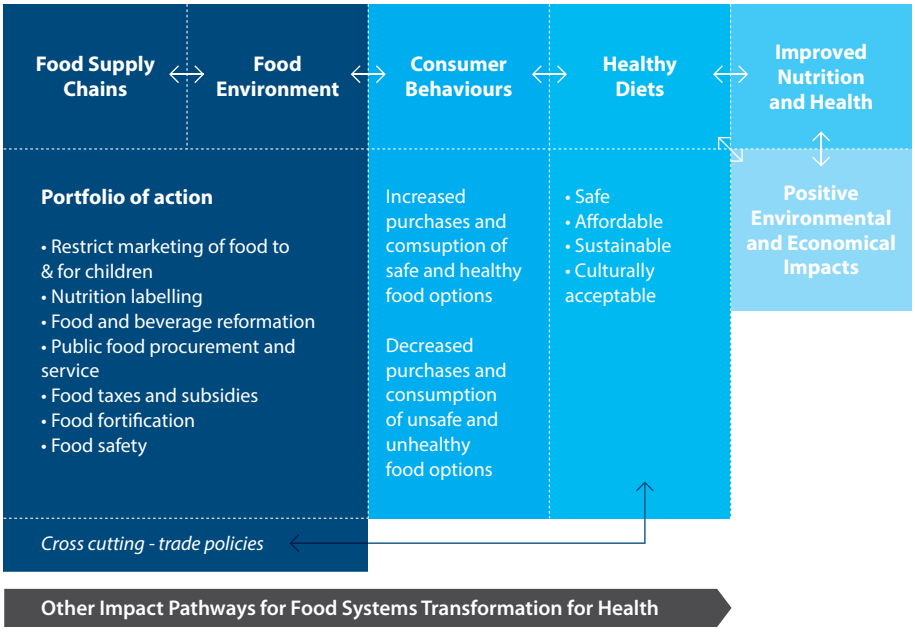
Policies to encourage reformulation of food and drink products. As highly processed and energy-dense foods have become more affordable and widely available, consumption of sodium, free sugars, and harmful fats have increased, contributing to increases in overweight, obesity and diet-related NCDs. Reformulation initiatives can reduce the content of sodium, free sugars, and harmful fats in food, along with the intake of these in populations.

Policies that ensure nutritious foods are served in schools and other public spaces. Millions of meals are served every day in government offices, schools, hospitals and other public places (or through government-funded programmes). These meals may not always accord with healthy diet recommendations. Healthy food procurement policies entail governments setting criteria that enable healthy diets for food served or sold in public settings.

Food fortification policies. Billions of people suffer from vitamin or mineral deficiencies, which has long-term consequences not only for individuals suffering from these deficiencies, but also their families, and societies. Fortification of staple foods (for example rice, corn, or flour) or commonly consumed condiments (such as salt) is an effective, simple, and inexpensive strategy to address such micronutrient deficiencies.

References for text box: (164)

Fig. 3.1 Schematic model of the WHO Portfolio of action for food supply chains and food environments to deliver healthy diets



*This portfolio of action can help transform food supply chains and food environments to deliver healthy diets that are safe, affordable, sustainable and culturally acceptable, resulting in improved nutrition and health outcomes and with positive impacts on the environment and economies. Such action should be part of broader food systems transformation for health

Source: *(164)*

Price is a key determinant of consumption and the focus of taxes on foods and beverages. Price-related policy measures include both taxes and subsidies. As explained in section 1.2.3 of this manual, as price increases demand tends to fall (mediated by the price elasticity of the product). Similarly, in the case of subsidies, as price decreases demand tends to increase.

Systematic reviews of subsidy schemes show that they can increase consumption of healthier food options and improve health outcomes *(58, 76, 102, 165-168)*. Examples of subsidies to reduce the cost of healthy foods include voucher schemes, cash transfers and giving healthy food away for free. Voucher schemes are often offered to low-income populations and have been shown to increase utilization of a wide range of health goods, thus improving dietary quality through increased consumption of healthy foods *(169, 170)*. Public food distribution systems, such as those seen in India, need further evaluation but seem to increase household energy consumption (total energy content of foods consumed). In-kind transfers are often criticized because they restrict consumer choice, which, in economic terms, constrains utility maximization. Cash transfers seem to outperform free food schemes; however, there is some evidence that this may be because costs are shifted to the recipients *(171, 172)*. Some authorities have increased the price of less-healthy products by licensing production, but licensing seems to reduce consumption only when fees are high and are passed on to consumers in the form of higher prices *(173)*.

The health impact of such subsidies is mediated by what consumers do with the money they save. If they spend the extra cash on less-healthy food, the impact can be negative. Another concern is that, unless subsidies are targeted, they may disproportionately benefit the affluent and those who would have bought the subsidized items anyway *(57)*. On a related note, some governments, particularly in LMICs, subsidize high-energy foods, including those high in saturated fats, trans fats, free sugars and salt. Although an assessment of these types of subsidies is beyond the scope of this manual, in some instances these types of subsidies may merit a revaluation as to ensure they are not significant factors in encouraging unhealthy diets *(174, 175)*. Price interventions more generally have shown to perform well in promoting healthy diets *(57, 168)*.

In countries where a significant amount of less-healthy food is bought at promotional prices, restriction of price promotions may reduce consumption by increasing consumer prices. In the United Kingdom, for example, promotions (e.g. buy one, get one free) increase the amount of food bought by 22%, including a 6% increase in high-sugar foods *(176)*. Promotional price restrictions may be more appropriate in countries such as France, Germany and the United Kingdom, where 20-40% of all food is bought at promotional prices *(177)*.

3.1.4 POLITICAL ASSESSMENT

As noted previously, skilfully formulated policy justifications are not always enough to get a policy enacted, especially when it comes to taxation policies. Political processes and external stakeholders (along with associated power relations) are some of the other key factors that play a role in the success or failure of the implementation of policy interventions. A political assessment process is useful to identify key stakeholders and the extent of their receptiveness to a new tax. Conducting a political assessment is essential to understand the position, motivations and influence of key stakeholders; anticipate opposition to the proposed SSB tax policy; and identify potential collaborators for building a coalition of support in favour of the policy. This section outlines the rationale and provides a simple tool for conducting a political analysis.

The decision to tax less-healthy foods and drinks is deeply political, and politicians must balance a range of responsibilities. Politicians are (depending on the setting) accountable to their voters, their political party, the national constitution and the best interests of their country. They are also influenced by a range of stakeholders, including groups in government, civil society, industry and the media. Conducting a political analysis can be a helpful way to identify the key players, their incentives, relationships and the distribution of power *(178)*. The results can be used to identify policy options and actions to increase the likelihood that an SSB tax will be adopted.

Multiple tools are available, ranging from some requiring expert knowledge and significant resources to rapid assessment models that require minimal experience *(179)*. For a succinct overview of, and links to, further resources see Mcloughlin (2014)*(178)*. A simple three-stage prospective process (modified from the political commitment and opportunity measurement rapid assessment tool by Fox et al.) is presented here *(180)*.

1. Assess political commitment along three axes
   - Expressed commitment: verbal declarations of support from high-level government leaders.
   - Institutional commitment: specific policies and operational support for the issue.
   - Budgetary commitment.
2. Assess policy windows of opportunity
   - Assess whether the issue is widely perceived as a problem by decision makers.
   - Assess whether the policy options that can address the issue are viable in the country context.
   - Assess whether events have led to a politically favourable climate.

3. Conduct a stakeholder and institutional analysis
   - Identify and assess the positions of key stakeholders and institutions
   - Identify powerful opponents and supporters.
   - Identify "veto players."
   - Consider the motives of various actors and the means of influencing them.
   - Anticipate opposition and assess the main opposing arguments.

3.2 SPECIFYING POLICY OBJECTIVES

Policy-makers tasked with implementing SSB taxes benefit from defining explicitly what this measure is intended to achieve. Through the situational analysis, policy-makers would have assembled data to characterize the prevailing dietary patterns and diet-related disease burden. In the context of this situational analysis the challenge facing the policy-maker is then to set objectives to ameliorate deficiencies in diet and prevent disease. Specifying objectives serves a number of purposes. First, specifying objectives will assist policy-makers in identifying and designing appropriate policy solutions. Second, it can assist in the implementation of policies by providing clear motivations for legislators and stakeholders. Third, it can help appropriately frame the SSB tax to safeguard against industry attacks. Finally, pre-specifying objectives allows for the identification of indicators that can be used in evaluation of the policy.

In general, an SSB tax can have three objectives: first, improving health by promoting healthier diets through either disincentivizing consumption of SSB products (as in Mexico and Peru) or encouraging the reformulation of products to contain less sugar (as in South Africa and the United Kingdom); second, generating additional government revenue; and third a mixture of generating revenue and improving health. The revenue-generation objectives may be of particular interest to countries in light of COVID-19 pandemic recovery, as government tax revenues have plummeted and social expenditure has risen globally.

It should be noted that establishing a clear policy objective early in the process is essential and an integral component of the design of an SSB tax policy. Because of the relatively high own-price elasticity of demand for SSBs, there is a tension between the revenue-raising and health objectives: the more successful an SSB tax is in increasing revenue, the less successful it will likely be at reducing consumption and vice versa *(95)*. As such, establishing a clear objective is integral to the tax design, as trade-offs will need to be considered. For example, a study simulating different tax designs in Mexico found that a volume-based specific tax would yield the largest tax revenue across all tax designs, while the sugar-based specific tax would yield less revenue but up to twice the sugar reduction of the volume-based tax *(181)*. The rate of the tax will likely also be influenced by the specified objective of the SSB tax policy.

In the context of diet-related disease, international development agendas have created a framework of health-related goals that can provide guidance to policy-makers in envisioning health-related implications of food environment policies, including the implementation of an SSB tax. In particular, the Sustainable Development Goals (SDGs) that were unanimously adopted by 193 United Nations Member States in September 2015 *(182)*. The SDGs include:

- Goal 2: To end hunger, achieve food security and improved nutrition and promote sustainable agriculture.
- Target 2.2: To end all forms of malnutrition by 2030.
- Goal 3: To ensure healthy lives and promote well-being for all at all ages.
- Target 3.4: To reduce by one third premature mortality from NCDs by 2030.

There are other global and regional commitments that can help specify health objectives beyond the SDGs. In some countries, related national development plans specify development goals. For example, South Africa's National Development Plan includes "Goal 4: Significantly reduce prevalence of non-communicable chronic diseases." Moreover, South Africa's Development Plan further notes that "risk factors include tobacco smoking, physical inactivity, raised blood pressure, raised blood glucose, obesity and raised cholesterol" *(183)*. Such language has provided direction for the adoption of intersectoral disease prevention policies in that context.

If a health-related objective is to be pursued, it is important to consider more proximal health indicators for the SSB tax. A challenge with specifying reduced prevalence of diet-related NCDs as objectives is that they have multiple causes and require significant time for changes in risk factors to produce changes in incidence that can be attributed to particular policy interventions *(184, 185)*. For example, it is not reasonable to expect population-level changes in diabetes prevalence after one, two or even five years of implementation of an SSB tax; the health impacts have a significant time lag. As such, it is worth considering the use of more intermediate changes in consumption as objectives. For example, if reduced obesity or type 2 diabetes mellitus incidence is identified as a health objective, intermediate objectives could be reduced consumption of high-sugar products like SSBs, and with that reduced free sugar intake. These intermediate objectives are essential to consider, along with longer-term outcomes, to measure incremental progress as well as to safeguard against industry claims that the SSB tax is ineffective.

3.3 ASSESSING FEASIBILITY AND ACCEPTABILITY

Where a tax is being considered, a thorough justification goes beyond assessing the health and economic motivations and stakeholders' incentives; it also must consider the potential impact as well as the technical, administrative and political feasibility of introducing a new measure. Since interference from the food and beverage industry in the policy development and implementation process is a clear barrier to advancing SSB tax policies, to complement the analysis on feasibility and acceptability, policy-makers should also consider developing a strategy for countering industry efforts to undermine SSB tax policies (for more information on the political economy of SSB taxes and common industry arguments against SSB taxes please refer to Chapter 6).

3.3.1 POTENTIAL IMPACTS

Since decision, design and implementation of taxation policies lies within the competency of finance authorities, it is essential to have data that resonate with their concerns and priorities. Health authorities gaining a deeper understanding of how excess consumption of sugars may influence the broader economy, for example through productivity losses due to premature mortality or disability, could be an important component to persuade fiscal authorities to consider implementing an SSB tax policy. It is particularly important to estimate the impact of the proposed SSB tax on prices, consumption and revenues.

Thus, if policy-makers decide that a new tax is desirable, the next step is to assess its potential effect. Governments with greater resources may have the technical capacity to conduct modelling studies internally. The work may also be contracted out and done in collaboration with academia or civil society. Even a rudimentary modelling exercise can be valuable for testing assumptions and identifying further information requirements. A simple modelling exercise could simulate for different tax rate scenarios (e.g., specific excise tax rates equivalent to 20% vs 30% of the retail sale price of the target product) and for different price elasticities of demand (e.g., -0.8, -1.0, -1.2) on the following outcomes:

- changes in price
- changes on sales/consumption, and
- changes in tax revenue.

The primary outcomes of a modelling exercise are likely to be post-tax sales and consumption of target goods, the revenue generated by the tax and, if possible, the tax burden and changes in consumption by socioeconomic status. In short, SSB tax analysis studies should strive to answer the following questions:

- What would be the estimated impact of the proposed tax on prices?
- What is the price elasticity of demand for SSBs?
- What is the income elasticity of demand for SSBs?
- What is the estimated impact on consumption of the proposed tax?
- What is the estimated revenue impact of the proposed tax?
- What will be the cost savings for the national economy and society from taxing SSBs? (For example, monetary figures from averted productivity losses and health care costs).
- Will the positive social impact outweigh any negative impact of the proposed tax? In other words, will the overall economy be negatively impacted by the proposed tax?[2]
- Will certain sectors of the economy or population be negatively impacted by the proposed tax?[3]

Stratifying the data by age, sex and socioeconomic status can demonstrate differential impacts that may be important in terms of equity. For example, a modelling study conducted for Ecuador concluded that — since households in the lowest socioeconomic levels have price elasticities that are higher than those of the upper levels — the greater reduction in the consumption of SSBs would be among this group *(125)*. Another study in Kazakhstan suggests that the net income effect of an increase in taxes on SSBs is progressive in the long run, with lower-income households benefiting more in relative terms than higher-income households *(133)*. When possible, in analysing the potential impact of an SSB tax, it is also important to consider that taxes should preferably be implemented as part of a wider package of dietary interventions.

If sufficient data and capacity are available, data on the cost of the policy itself may be useful to compare with the estimated costs of other interventions designed to promote healthy eating. This allows for a cost-effectiveness analysis of alternative interventions.

To conduct the above-mentioned modelling studies on the potential impact, it will be necessary to have a series of inputs or parameters — such as price elasticities, income elasticities, cross-price elasticities and the likely substitution behaviour of consumers — that should preferably be country-specific. Economic analyses along with data from consumption surveys or household expenditure surveys can be used to obtain these parameters. Alternatively, in the absence of local estimates, time or capacity, international estimates can be used instead; albeit finance authorities tend to be more receptive to country-specific data.

2 This type of modelling is relatively more complex and data intensive.
3 This type of modelling is relatively more complex and data intensive.

Lastly, if sufficient data and capacity are available, it may be beneficial to conduct analyses of the potential impact of the SSB tax on key industries. These analyses will be useful to anticipate industry opposition, which usually hinges on exaggerated or unfounded claims of the tax's impact on employment losses, a disproportionate burden on lower-income populations or increases in cross-border shopping (please refer to chapter 6 for more detail on common industry arguments).

For example, once a set of food products have been identified whose excessive consumption contributes to undesirable health outcomes, it could be beneficial to collect industry data (sales volumes and prices) from major importers, producers and retailers of the targeted products to identify industry stakeholders and how prices, sales and employment may be affected by the tax. Industry's power, interests and motivations should be considered when assessing the political feasibility of a tax measure (see section 3.2.4). With estimated values of after-tax sales, it is possible to calculate employment impact using product-employment elasticities. Quantitative estimates of post-tax values of sales and employment can also help to inform the tax design process and anticipate industry efforts to weaken, delay or avoid the implementation of SSB taxes.

Table 3.3 presents some key information with respect to health, diet, industry and economy that will be instrumental in modelling the potential impact of the proposed SSB policy. Items listed under the "priority data" column are the most fundamental to modelling tax impact. In countries where the data and technical capacity exist, the items in the "advanced data" column will make for a much more robust analysis. Where the capacity does not yet exist, these advanced topics can be considered as potential areas for future research. As much as possible, data should be stratified by age, sex, socioeconomic status, region and BMI group.

Table 3.3 Information for country-specific impact modelling

	PRIORITY DATA	ADVANCED DATA
Health	• Trends in prevalence, incidence, morbidity and mortality from diet-related diseases, including overweight and obesity, type 2 diabetes and dental caries • Costs of national health expenditures on diet-related diseases – if possible, specifically for SSB-related diseases	• Diet-attributable burden of disease* • Burden of disease related to sugar or SSBs* • Projections in trends of diet-related diseases

	PRIORITY DATA	ADVANCED DATA
Diet	• Average daily consumption of SSBs (mL and calories) by beverage type • Trends in average daily energy intake • Average daily intake (calories/volume/weight) of added and total sugars • Mean household expenditure and mean household quantity purchased (in litres per capita) for beverages as a proportion of the household food budget	• Percentage of calories derived from free sugars in potential target items • Dominant SSB products and trends as percentage of sales or consumption (example, fruit juices versus energy drinks)*
Price and sales	• Sales per capita of SSBs • SSB price per litre by package size and type of beverage • Price elasticity of demand for SSBs (own, cross-price and income elasticities) • Quantities consumed/sales quantities of targeted products	• Percentage of SSB sales produced domestically, imported and exported • Dominant SSB products and trends as percentage of sales or consumption • Substitution effects
Industry	• Sales volumes of potential targeted items • Contribution of SSBs to the economy in terms of employment and value creation • Overall employment related to SSB production • Employment by producers of the targeted products	• Any legislation allowing or prohibiting firms to make promotions or discounts of targeted products • Total costs to the economy from consumption of unhealthy targeted foods, including absenteeism, presentism, lost labour productivity, welfare
Environment		• Contribution of unhealthy targeted food production to environmental degradation*

*These data may not be readily available from mainstream public sources but may be available from commercial sources.
CPI = Consumer price index

3.3.2 TECHNICAL FEASIBILITY

A number of factors determine how new tax proposals will be received, including the administrative capacity of the finance and revenue authorities, past performance regarding changes to tax legislation, political inclinations and the general level of government corruption and competence *(186)*. An assessment of these factors enables policy-makers to design taxes that are most likely to be adopted and implemented. The ease of collecting taxes is also an important consideration that will vary according to the type of measure employed and the stage of the food chain that is targeted.

Measures that operate within the existing tax framework and align with domestic and international tax agendas tend to be the most practical *(187)*. For instance, extending value added tax (VAT) to less-healthy goods that are currently

excluded from VAT but are already classified in the tax code may be easier than introducing a new excise tax. Similarly, removing tax exemptions from SSBs, sugar, or other unhealthy goods may be more feasible than introducing a new excise tax. Proposed taxes should also operate within the relevant legal system. As an example, European Union (EU) countries cannot increase VAT on SSBs beyond 25% as this would breach EU law. Nevertheless, although changing existing VAT can be easier than implementing new excise taxes, excise taxes tend to be preferred from a public health perspective because they raise the price of targeted products compared to other goods and services in the economy while VAT do not. Chapter 4 provides more insights into the advantages and disadvantages of the different types of consumption taxes from a public health perspective, along with other tax design considerations.

3.3.3 POLITICAL STRATEGY

Motivating decision-makers to take action requires strategic preparation in addition to using relevant, up-to-date evidence (such as described above) demonstrating how taxes can contribute to improving public health. Assessing political feasibility, based on the political analysis, and building a corresponding strategic plan are key components of developing and implementing SSB tax policies. A strategic plan will include a well-designed advocacy and public awareness strategy that helps to foster political commitment, hold authorities accountable and inform the public about positive health consequences and any potential negative effects of the tax.

Defining the target audience for the strategic plan means identifying those with the power to change policy, as well as consideration of supporters and potential opponents within different sectors. Once these audiences have been identified, tailored key messages can then be established and directed at the primary and secondary target audiences for advocacy. Target audiences can generally be divided into two groups: decision-makers and influencers. Decision-makers and influencers can in turn be supporters or opponents of a given policy.

Decision-makers can often be thought of as the primary audience. They generally sit in government and include presidents or prime ministers, health ministers, parliamentarians, and budgetary decision-makers (cabinets, ministries of finance or planning). Country experiences show that an early multisectoral engagement within government — involving health, finance, agriculture, trade/commerce, customs/revenue agencies, as well as legislative and executive branches of government — helps enable development and implementation of SSB tax policies *(188, 189)*. For example, a case study of the political economy of the SSB tax experience in Mexico, Chile and Colombia concludes that "intergovernmental support was critical to framing

the SSB tax aims, benefits and implementation; and for countries to adopt it" *(189)*.[4] Multisectoral engagement can thus facilitate involvement of relevant stakeholders throughout the policy process, alignment of policy priorities and coherence across sectors – all of which help build political support and enable the development and implementation of SSB tax policies, along with strong political leadership *(144)*. Delivering powerful communication to decision-makers requires an understanding of the interests and views of the desired target audience. For instance, policy-makers require tailored information, often including compelling and succinctly packaged summaries of evidence, and costs and benefits.

Influencers, on the other hand, are secondary audiences who have the ability to persuade decision-makers (or the primary target audience). These can include civil society, academics and researchers, opinion leaders, health care professionals, consumer groups, and media. Most messages require repeated dissemination through multiple channels to be heard and acted upon. As with tailoring specific messaging, choosing a means to communicate will also depend on what best suits the intended audience and what they will find most accessible and credible.

Country experiences show that the roles of civil society, academia and health professionals are critical in advancing SSB tax policies. Not only are they essential partners in counteracting undue pressure from food and beverage companies – developing relevant country-specific evidence to counter unfounded industry claims and monitoring policies and ensuring their appropriate implementation – but also in generating public and political support for a tax *(123)*. For example, analyses of the SSB tax in Mexico report that public health advocates successfully used mass media communication campaigns presenting clear, simple, specific messages to raise the public and political profile of the issue and increased community support *(190)*. Building a coalition among key stakeholders, including civil society and academia, can enable the coordination of efforts and martialling of resources to counter industry opposition throughout the policy development and implementation process, as well as to improve the design of the policy during the monitoring and evaluation stages of the policy process.

In addition to decision-makers and influencers, public opinion is also important. Public opinion can be used by proponents and critics alike as a potent means to influence decision-makers who, after all, often rely on popular support. There are many ways to investigate public opinion, values and preferences — such as opinion polls, sociological or nutrition surveys and discrete-choice experiments — nonetheless, this work is often undertaken by pollsters as opposed to think tanks or academics *(191)*. Data from the United States and western Europe show that the public are

4 As of 2022, no SSB tax has been implemented in Colombia.

broadly aware of how to eat more healthily but vary in their willingness to accept fiscal measures to improve diets. Subsidies are generally more popular than taxes, and support for the latter is influenced by the extent to which people believe diet-related illness should be attributed to factors such as genetics, the environment or failure of willpower *(192-195)*. An accurate understanding of public opinion around these issues is useful for formulating policies that stand the best chance of being adopted.

3.4 OTHER CONSIDERATIONS

3.4.1 ANTICIPATING OPPOSITION

As noted above, interference from the food and beverage industry in the policy development and implementation process is a clear barrier to advancing SSB tax policies, in fact, global experiences in implementing tobacco taxes show that the main difficulties are not within the technical realm of designing the taxes, but in countering industry opposition. SSB taxes threaten to diminish the profits of food and beverage corporations, so these industries tend to oppose such taxes. Thus, it is important to proactively develop a strategy and evidence to effectively counter industry arguments and efforts to weaken, delay or avoid SSB tax measures during the policy cycle. In some countries, it is necessary to carry out public consultation of proposed policies. During this process, stakeholders, including industry, can provide comments that may or may not be considered in the final design of the policy.

Policy-makers should be aware that, in the case of SSB taxes, the industry's unavoidable conflict of interest poses an inherent challenge. Ideally, governance mechanisms should be in place to effectively manage these sorts of conflicts of interest and safeguard policies that seek to improve health and well-being against industry interference. For example, the Guidelines for implementation of Article 5.3 of the WHO Framework Convention on Tobacco Control set forth a series of recommendations to safeguard public health policies with respect to tobacco control from commercial and other vested interests of the tobacco industry *(196)*. These principles can serve as a blueprint for safeguarding other public health policies, such as SSB taxes, from commercial interests.

Of note, the food and beverage industry often uses a series of predictable yet largely exaggerated and sometimes unfounded arguments to try to avoid tax implementation or increases. Common myths relate to the impact on jobs, businesses, those on a low income, and tax evasion. Industry arguments against SSB tax policies can be roughly organized into the five categories of SCARE tactics: (S) sowing doubt by discrediting science and diverting attention, (C) court and legal challenge threats, (A) anti-poor rhetoric (regressivity), (R) revenue instability and (E) employment impact (for more detail on these tactics see Chapter 6).

Policy-makers should see through the industry arguments by considering who benefits from industry-favoured policy measures and should anticipate industry opposition with relevant counterevidence. For example, a case study analysing the experience of developing an SSB tax in Estonia explains that industry claimed the tax would be ineffective in reducing consumption, which was countered with various modelling exercises using local data to explore the impact of several scenarios on consumption and health gains *(197, 198)*.[5] The case study concludes:

> The preparation of solid evidence is crucial; when well-prepared, it disarms the industry from their claims. It is also important to share and present evidence widely in order to reach the broadest possible audience, including politicians, potential supporters and the public *(199)*.

3.4.2 FRAMING THE ISSUE

Once policy-makers have determined the primary objective of the SSB tax policy, and assessed the feasibility, careful consideration should be given to how the SSB tax policy is framed. This influences not only public support but also its susceptibility to industry efforts to undermine the policy *(200)*. In general, an SSB tax could be framed in three ways: a health-promoting initiative, a revenue-generation tool, or a combination of both health and revenue.

The framing should align with the identified primary objective as well as with the design of the SSB tax policy. If public health is the focus, it is worth considering the use of more proximal or intermediate changes in consumption as objectives, as opposed to changes in prevalence of health conditions such as type 2 diabetes or obesity, as impacts of the SSB tax on observable population effects will be delayed – leaving the policy vulnerable to industry attacks. For example, after only two years of implementation, the industry has attacked the SSB tax in Mexico on the basis that it has not reduced rates of obesity *(201)*. Conversely, if revenue generation is the focus, it is important to accurately project revenues (ideally under several scenarios) to avoid overestimating revenue expectations, as underperformance can later be used by opponents to weaken support for a tax *(59)*.

Lastly, if an SSB tax is framed as beneficial to both health and revenue, the policy objectives should be made very clear to avoid leaving the policy vulnerable to criticism. The case of the Danish tax on saturated fats is an example of how ambiguity in the objectives and poor framing led to its repeal within a year of implementation *(202, 203)*. Nonetheless, evidence from Pacific island countries and Europe indicates that

5 The SSB tax in Estonia was not implemented as planned in January 2018. It is in stasis in the finance committee of parliament after being vetoed by the president in office in 2017.

framing the SSB tax using both the health and revenue angles can increase public and political support *(55, 204, 205)*.

It has also proven effective to raise SSB policy support by earmarking for either health or social programmes *(144, 206)*. Earmarking involves the separation of all or some tax revenue for a specific purpose. For example, in the city of Philadelphia in the United States the revenue from the SSB tax was used to finance universal pre-kindergarten, an approach which enabled broad support *(144, 207, 208)*. Similarly, SSB tax revenues in France are used to support social security (including health care), and in Portugal revenues are used to support the national health service *(205)*.

It should be noted, nonetheless, that earmarking is a contentious topic that goes beyond the specifics of SSB tax earmarking and into the ambit of public financial management — where earmarking is not generally encouraged *(186)*. From a public health perspective, SSB tax earmarking is best understood as a way of selling SSB taxes to the public, politicians and officials. It is a tool to improve the political economy of SSB taxation; it is a secondary issue only, after the primary goal of reducing demand for SSBs.

3.5 CHAPTER 3 MAIN TAKEAWAYS

- There are many domains in which governments can intervene to promote healthier diets, including SSB taxes. SSB taxes are more effective when implemented as part as a comprehensive package.
- Where new SSB taxes are being considered, it is useful to have a detailed and quantified understanding and evidence base of the health and economic issues they aim to address.
- Ideally, a proper situation analysis, good political advocacy, coalition building, appropriate objective setting and evaluation should all be part of the multidisciplinary development and implementation of SSB policies.
- Establishing the overall objectives helps policy-makers define what they hope to achieve and how the tax will be framed as well as providing benchmarks against which performance can be assessed.
- A political analysis can help to identify both supporters and opponents of an SSB tax policy, as well as their motives. This should help inform the development of a strategic advocacy plan to mobilize support from relevant stakeholders and foster political commitment.
- Multisectoral engagement within government (involvement of health, finance, agriculture, trade/commerce, as well as legislative and executive branches of government) is an enabling factor for the development and implementation of SSB tax policies.

- A tax is likely to be opposed by powerful political forces and other groups with competing interests.
- Interference from the food and beverage industry in the policy development and implementation process is a clear barrier to advancing SSB tax policies. Policymakers should anticipate industry arguments and prepare accordingly with relevant evidence and a strategy to counter unfounded or exaggerated industry claims.
- Building a coalition with civil society, academia and health professionals can be instrumental in gathering public and political support for SSB taxation policies and in countering industry claims.
- A well-designed advocacy and public awareness campaign can help to increase political and public support for a tax. Earmarking, albeit not usually encouraged in public financial management, can be a tool for gathering support from the public, politicians and officials.

CHAPTER 4.

Tax policy design

Once a situational analysis has been undertaken, objectives have been defined and a new tax has been identified as a potential solution, the next challenge faced by policy-makers is to design an appropriate tax instrument. There is no one-size-fits-all approach to SSB taxation, as many factors come into play in choosing the right design. SSB tax policy designs should consider the baseline levels of consumption of various SSBs, as identified in the situational analysis, and align these with the primary identified objectives of the tax. Health taxes can serve various purposes, including the raising of revenue to fund the provision of services or redistributive transfers or, if designed and targeted appropriately, to shift behaviour and reduce the social harms of consumption of harmful products such as tobacco, alcohol and SSBs.

Tax policies can be designed to incentivize changes in the consumption and production of harmful products such as SSBs. However, these can differ significantly from setting to setting, including in the products subject to the tax, the type of excise system and at what level the applicable rates are set. Deciding how to tax SSBs is challenging for a number of reasons and must involve consideration of the interplay of administrative capacity and the desired impacts of the tax. There are several key dimensions to consider in the design of SSB taxes: the type of tax, the tax structure, the taxable products, the tax base and the tax rate *(209)*.

This chapter provides an overview of the different types of excise taxes on SSBs and their public health and revenue implications. Choosing an appropriate SSB tax structure for a country is paramount for a successful strategy to promote both public health and public finance, by reducing the consumption of SSBs while raising government revenue. Alongside the different types of taxes, this chapter provides an overview of key SSB tax design considerations for policy-makers, outlines issues involved in the tax design and highlights some approaches that have been taken in the design of existing SSB taxes in a variety of countries. For health authorities, this chapter articulates key decisions that need to be made during the tax design process. Understanding the nuances along with advantages and disadvantages may facilitate more effective engagement with finance authorities during the decision-making process of SSB tax design.

4.1 TYPES OF TAXES

There are many ways in which SSB taxes may be designed — each design characteristic has the potential to create different incentives and disincentives that have different implications for public health. As mentioned above, the type of tax, the tax structure, the taxable products, tax base and the tax rate are all key dimensions to consider. This first subsection describes the different types of taxes that are applied to SSBs.

Broadly speaking, governments can levy two types of tax: direct taxes or indirect taxes. Direct taxes are levied on the incomes of either individuals or companies, while indirect taxes are levied on the production or purchase of goods and services.

4.1.1 INDIRECT TAXES

Consumption taxes are often referred to as indirect taxes. This is because they apply to transactions, products and events rather than to the agents who profit from these interactions. Consumption taxes are levied on expenditure rather than income (i.e., personal or corporate income). While governments collect indirect taxes from producers and distributors, such taxes are usually passed on to consumers in the form of higher prices that induce changes in consumption of the taxed products and its substitutes. There are three main categories of consumption tax: sales taxes/value added taxes (VAT), import duties and excise taxes on select goods and services.

4.1.2 VAT/SALES TAXES

Value added tax (VAT), or goods and services tax (GST) in some settings, is widely used as an indirect tax on domestic consumption. It is generally applied at a fixed rate across a broad range of goods and services.

VAT is an ad valorem tax, levied as a percentage of the value of the product, that is assessed and collected on the net value added at each stage in the supply chain. Companies claim back the VAT charged to them on the purchase of their inputs through the VAT they charge on the sale of their products. Through this arrangement, the tax accumulates along the life course of the product and is ultimately borne by the final consumer. VAT rates vary by country, and many countries exempt certain goods and services.

In some settings, multi-tiered VAT systems are used where goods or services are subject to differing VAT rates. The administration of a multi-tiered VAT is more complex than a single-rate VAT, which can have implications for the efficiency of VAT in achieving its revenue-raising objectives, as well as the potential for VAT to be used to tax unhealthy products. For example, a multi-tiered VAT system can enable differentiation between SSBs and healthier substitutes, if a higher tax rate applies to SSB products.

Sales taxes are also ad valorem taxes levied on the sale of goods and services. Unlike VAT which is collected throughout the production process of a product, sales taxes are collected only at the point of sale to the final consumer. Such taxes are typically not used as a tool for SSB taxation, with the notable exception of India and local jurisdictions in the United States where SSB taxes have been levied through sales taxes — likely because they are often the only practical means available for local governments to impose taxes on these products when the national government is unlikely to apply one at the national level.

VAT and sales taxes are not the preferred method to target a decrease in the consumption of SSBs. This is because these types of taxes apply to a broad range of goods and services and may not raise the relative price of SSBs compared to other goods and services in the economy, with all other conditions remaining the same. In short, these taxes may not make SSBs less affordable relative to other products and services. Decreasing relative affordability is essential for decreasing the consumption of SSBs.

The notable exception to this is when the VAT rate is higher for SSBs than other products or when VAT is removed from healthier alternatives to SSBs, such as bottled water. For example, in 2021 the Spanish government increased VAT on SSBs (and not other products) with the objective of tackling increased rates of overweight and obesity in the population *(210)*. Although this approach increases the relative price of SSBs, it is undesirable because it adds complexity to tax administration.

4.1.3 IMPORT DUTIES

An import duty (or tariff) is a tax on a selected product imported into a country and destined for domestic consumption (i.e., the goods are not in transit to another country). In general, import duties are collected from the importer at the point of entry into the country. Import duties also vary among countries. Countries impose high import duties either to protect their domestic industry or to generate government revenue. In recent years, given bilateral, regional and global trade agreements, import duty rates have been reduced dramatically by many countries. Import duties discriminate against imported products, and free trade agreements usually require participating countries to gradually phase them out.

Import duties are not the preferred option for taxing SSBs with the objective of decreasing SSB consumption. This is primarily due to the fact that there has been a shift in focus of trade from revenue generation to trade facilitation. As import duties are phased out, the government loses the revenues that import duties previously generated. Replacing import duties with excise taxes or increasing excise taxes can compensate for these revenue losses.

4.1.4 EXCISE TAXES

Excise taxes are levied on the manufacture or importation of particular goods (they apply equally to domestically produced and imported products), and are often used as Pigouvian taxes implemented to provoke a behaviour change to correct for negative externalities/internalities *(211)*. Excise taxes can take three different forms: ad valorem, levied as a percentage of the value of a product, as in Barbados where there is an SSB excise of 10% of the producer price; specific (also referred to as "ad quantum"), levied as a monetary value per quantity, as in Mauritius where there is a 0.03 Mauritian rupee per gram of sugar (around US$ 0.0008) tax on all SSBs; and a mixed excise, which is combination of ad valorem and specific, as in Ecuador where an ad valorem excise tax of 10% of the retail price (excluding VAT) applies to SSBs with less than 25 grams sugar per litre, and a specific tax of US$ 0.0018 applies per gram of sugar on drinks with more than 25 grams of sugar per litre *(59, 93)*.

Of the various types of consumption taxes applied to SSB products, excise taxes are of the greatest importance when considering health objectives. All things being equal, these taxes will raise the price of SSB products relative to the prices of other goods and services, unlike taxes that apply to a wide variety of goods and services, such as value added taxes and general consumption taxes. Relative to other products also subject to some form of excise, it is the excess over the average excise tax rate that increases the effectiveness of the SSB excise. Moreover, other types of consumption taxes (e.g., import taxes) may be vulnerable to international trade litigation, or may be too broad to target health-harming products and ineffective in reducing consumption of said products (e.g., sales taxes or VAT apply to most goods and services).

In short, excises are the most important for achieving the health objective of reducing SSB consumption since they are uniquely applied to SSB products and raise product prices relative to other goods and services. Nonetheless, it is important to consider that each different type of excise tax (ad valorem, specific or mixed), has advantages and disadvantages that have different implications for public health.

Ad valorem excise taxes, as mentioned above, are levied as a percentage of the value of a product. Benefits of ad valorem taxes include: the real value of the excise is preserved as prices increase (since the tax is levied as a percentage of the product value, the real value, adjusted for inflation, is preserved); and they may generate more revenue when there are large price gaps. Disadvantages are that: they do not effectively target cheap products (the same rate applies to expensive products, but cheaper products have a smaller tax base or value on which the tax is based) such that they do not reduce price differences within products and consumers may substitute cheaper products without reducing the volume of SSBs and sugar they consume;

they may be susceptible to undervaluation (underreporting of value on which the tax is based); and require a relatively strong technical tax administration capacity.

Countries that apply ad valorem excise taxes on SSBs include Barbados (10% of the producer price), Peru (25% of the retail price excluding VAT and excise) and Kiribati (40% of market wholesale value) *(83, 93, 212)*. Evidence indicates that ad valorem taxes on SSBs are less likely to be fully passed through to prices compared to specific taxes *(153)*.

Specific excise taxes, levied as a monetary value according to a certain physical characteristic of the product, such as its volume or sugar content, also have a series of advantages and disadvantages. Some benefits of specific excise taxes are that: they effectively target cheap products (since the same rate applies to products regardless of price, the relative impact on cheap products will be larger, all things being equal); they reduce the incentives to switch to less-expensive brands; they are relatively easier to administer and do not require a high administrative capacity; and tax revenues are likely to be more predictable as they are not subject to industry price manipulation (because revenue does not fluctuate with the price of the product). A significant disadvantage is that — unless periodically adjusted for inflation — the real value of the tax is eroded over time, along with its effectiveness in reducing consumption. To circumvent this disadvantage, some countries issue automatic, legally set adjustments of excise taxes for inflation.

Generally, specific excise taxes are preferred from a public health perspective to reduce consumption of targeted products. All things being equal, specific excise taxes are preferable because they increase the price of all taxed products in the same way (effectively targeting cheaper products), are less vulnerable to price manipulation, are easier to administer and provide more predictable revenues. Countries that apply specific excise taxes on SSBs include Belgium (€0.068 per litre), French Polynesia (40 Pacific francs per litre for domestic and 60 Pacific francs for imported SSBs), Mexico (1 peso per litre) and Mauritius (0.03 Mauritian rupees per gram of sugar) *(59, 93, 199)*.

Excise taxes can also be implemented in a mixed way. For example, a combination of ad valorem with a minimum specific excise tax (or tax floor). Another example is a mixed specific and ad valorem system as applied in Ecuador, where an ad valorem excise tax of 10% of the retail price (excluding VAT) applies to SSBs with less than 25 grams of sugar per litre and a specific tax of US$ 0.0018 applies per gram of sugar on drinks with more than 25 grams of sugar per litre *(93)*. If considering a mixed excise system, it is important to evaluate the incentives created and the technical capacity in tax administration necessary to implement said system.

4.2 TAXABLE PRODUCTS AND TAX BASE

Defining the taxable products and the base of an SSB tax involves specifying what types of SSB product would be subject to the tax, while defining the tax base involves specifying how the tax liability on the taxable products should be determined, including whether it is based on value, sugar content or volume *(173, 213)*.

Countries that impose excise taxes on SSBs define taxable products in different ways. Since all forms of free sugars are considered a risk factor (as indicated in the WHO *Guideline: sugars intake for adults and children*), if SSBs are taken to be non-alcoholic beverages sweetened with free sugars, this encompasses a highly heterogeneous class of products, from carbonated soft drinks to 100% fruit juices to sweetened dairy products *(2)*. One of the challenges is the variety in nutrient content across types of products — specifically, while many are sufficiently high in free sugars to warrant taxation, some include other nutrients that may contribute to a healthy diet (e.g., protein in chocolate milk) that could mitigate concerns. The decision of which products to subject to a tax is informed by the situational analysis (see Chapter 3), which assesses the size of a particular beverage market in a given context and the relative contributions of particular beverages to free sugar or caloric intakes. This needs to be considered alongside price sensitivities and anticipated substitutions.

To avoid loopholes and to optimize the public health impact from the onset, it is essential to clearly define taxable products from the very beginning. Box 4.1 presents lessons learned on this point from Barbados. Preferably, the list of taxable products should incorporate all subtypes of SSBs (including carbonated or non-carbonated soft drinks, fruit/vegetable juices and drinks, liquid and powder concentrates, flavoured water — including coconut- and plant-based waters and yoghurt drinks — energy and sports drinks, ready-to-drink tea, ready-to-drink coffee and flavoured milk drinks) in order to prevent undesirable substitutions of untaxed SSBs for taxed SSBs, so undermining the health objectives of the tax policy. Consideration should also be given to taxing no-sugar or non-sugar sweetened beverages for two reasons: first, because there is evidence that these beverages increase the risk of adverse health outcomes, and second, to avoid product substitution to these beverages *(214)*.

Following the same health rationale of taxing SSB products due to their high contribution of free sugars to diets, excise taxes should not be applied to unsweetened bottled water. Bottled water is a non-SSB that presents a healthier beverage alternative to SSBs. Taxing bottled water would impede the generation of a price differential between SSBs and this healthier alternative, thus stifling efforts to make the unhealthy SSB choice relatively more expensive (less affordable) than a healthier alternative. Despite this, some countries that apply excise taxes to SSBs also apply a tax on bottled water. Many countries in Latin America, for example, have SSB excise tax policies with overly broad definitions, such that bottled water is included because this distinction

was not made from the beginning — likely because these taxes did not have an initial health-related objective *(83)*. Excluding bottled water from the list of taxable products is a clear way to strengthen SSB tax policies in these countries, by creating a price differential between SSBs and healthy non-SSB alternatives.

Some countries use Harmonized System (HS) codes — an internationally standardized nomenclature using four to six figures to classify traded products — as a means of identifying the targeted products to be taxed *(215)*. If considering the use of HS codes to determine the taxable products under the SSB tax, it is important to consider that SSBs are found across several different HS codes (see Figure 4.1).

Fig. 4.1 Categories of beverages in the Harmonized System according to content of free sugars and non-sugar sweeteners

Sugar-sweetened beverages	Beverages with non-sugar sweetners	Beverages that are not sweetened
22.02 Waters, including mineral waters and aerated waters, containing added sugar and other sweetening matter or flavoured		**22.01** Waters, including natural or artificial mineral waters and aerated waters, not containing added sugar or other sweetening matter not flavoured; ice and snow
	20.09 Fruit juices (including grape must) and vegetable juices, unfermented and not containing added spirit, whether or not containing added sugar or other sweetening matter	
04.02 Milk and cream; concentrated or containing added sugar or other sweetening matter		**04.01** Milk and cream; not concentrated, not containing added sugar or other sweetening matter
04.03 Buttermilk, curdled milk and cream, yoghurt, kephir, fermented or acidified milk or cream		
	04.04 Whey and products consisting of natural milk constituents	
18.06 Chocolate and other food preparations containing cocoa	**21.01** Extracts, essences, concentrates of coffee, tea or mate; preparations with a basis of these products; roasted chicory	**21.06** Food preparations not elsewhere specified or included

Source: Author's elaboration based on *(216)*

Box 4.1 Closing SSB loopholes of taxed products in Barbados

In 2015, the Government of Barbados implemented a 10% ad valorem tax (based on the value of the product before VAT) on SSBs. Although the implementation of the tax was driven in many regards by fiscal conditions (the need for additional revenue), it was also driven by an explicit need to address the growing burden of NCDs and encourage healthier consumption patterns. The Minister of Finance and Economic Affairs said that "an ounce of prevention is worth more than a pound of cure" during his National Budget Speech in June 2015.

Under the original SSB tax in 2015, all products produced and imported under tariff headings 20.09 and 22.02 (see Fig. 4.1) were subjected to the excise tax, with beverages containing intrinsic sugars only (such as 100% natural fruit juice), coconut water, plain milk and evaporated milk being exempt. Within the first year of implementation, the SSB tax in Barbados resulted in a 4.3% reduction in sales of SSBs and an increase in sales of 5.2% and 7.5% of non-SSBs and bottled water, respectively, effectively demonstrating a shift in consumer purchases away from taxed products and towards untaxed products.

Nonetheless, the narrowly defined array of taxable products excluded some products that are high in free sugars and were relatively widely consumed in Barbados, undermining some of the expected health benefits. For example, the tax did not capture tariff headings for syrups, powders or crystals used to reconstitute SSBs at home. In fact, a study found that under the initial taxable product definition only 60% of SSB-derived free sugars would be subject to the tax. The tax was later amended in 2017 to include a broader base, including tariff headings 2106.90.10 and 2106.90.20, which correspond to "Mauby syrup" and "Other flavoured or coloured sugar syrups," respectively. Barbados' experience provides an illustrative lesson for countries designing SSB tax policies to seek to include all relevant subcategories of SSB in the definition of taxed products from the onset.

References for text box: (121, 217-220)

4.3 TAX STRUCTURE

Excise taxes can be applied as at a uniform (unique or the same) tax rate or a differential (tiered) rate, depending on product characteristics such as volume, sugar-content, type of sweetener or type of beverage.

With uniform tax structures, a single rate is applied across all taxable products regardless of product differences. Uniform tax structures, whether ad valorem or specific, are undoubtedly simpler to implement, enforce and administer than complex tiered systems. However, they do not encourage the SSB industry to reformulate

its products, which may or may not be part of the desired objectives of the policy. Countries that apply uniform SSB tax structures include, among others: Barbados, Belgium, Cook Islands, Dominica, France, Kiribati, Latvia, Mauritius, Monaco, Nauru, Palau, Peru, Samoa, Seychelles, South Africa and Vanuatu *(59)*.

On the other hand, with tiered structures discrete tiers are set based on thresholds (e.g., sugar content, type of beverage or type of sweetener used), across which the effective tax rates vary. In the case of SSBs, tiered tax structures based on price are not advisable because these widen the gaps in prices between different products, which may facilitate price manipulation on behalf of suppliers (to reduce tax liability) and may induce consumers to substitute with other equally unhealthy but cheaper SSBs.

Tiered structures based on sugar content, however, have several advantages that should be considered if there is a high administrative capacity to ensure compliance. Tiered structures based on sugar content may encourage suppliers to reformulate products (so that sugar content falls below the specified threshold) to avoid higher tax liabilities. The public health impact of an SSB tax with a tiered structure based on sugar content may thus be amplified by the supply-side response of reducing sugar content per serving for some products. See Box 4.2 for details on how the United Kingdom pursued this strategy with its SSB tax design.

The question on how and where to appropriately establish the sugar content thresholds remains critical, as this will influence not only the impact on consumption and revenue but also supply-side responses in terms of reformulation. Some experts have argued that examining the observed distribution of the most commonly consumed SSBs by sugar content can help guide the choice of appropriate thresholds for a tiered tax structure *(221)*. Countries that have implemented tiered tax structures based on sugar content include, among others: Chile, Ecuador, Ireland, Malaysia, Portugal and the United Kingdom *(59)*. The Philippines has applied a tiered structure based on the sweetener contained in SSBs, such that a 6-peso-per-litre (around US$ 0.12) tax applies to drinks containing sugar and artificial sweeteners, and a higher 12-peso-per-litre (around US$ 0.24) tax applies to drinks containing high-fructose corn syrup. Lastly, Bahrain, Oman, Qatar, the Kingdom of Saudi Arabia and the United Arab Emirates apply a tiered rate that varies according to product type, where a 50% tax is applied on all carbonated drinks (or soft drinks or drinks with added sugar depending on the country), and a 100% tax is applied on energy drinks *(210)*. Again, the tax administrative capacity is central to the decision on whether to implement a uniform or tiered tax structure based on sugar content.

Box 4.2 Structuring a tax to encourage SSB reformulation in the United Kingdom

In 2015, Public Health England, now known as the Office for Health Improvement and Disparities, published a report by the Scientific Advisory Committee on Nutrition (SACN) that recommended the average population maximum intake of sugar should be halved and should not exceed 5% of total dietary energy. The report also estimated that meeting this target at a population level within 10 years would save the National Health Service (NHS) around £500 million every year in costs of treating related diseases.

Acknowledging that no single action would be effective in reducing sugar intake to the desired levels, the report also included eight evidence-based actions most likely to be effective in reducing sugar intakes. Amongst the actions recommended is the use of a tax or levy to increase the price of high-sugar products, such as full-sugar soft drinks, by a minimum of 10-20%.

In response, as part of the United Kingdom's 2016 budget, Her Majesty's Treasury (HM Treasury) announced a new Soft Drinks Industry Levy (SDIL) that would apply to the production and importation of soft drinks containing added sugar and would take effect from April 2018. The stated focus of the levy was to create strong incentives for soft-drink reformulation (reducing the sugar content), so that "by taking reasonable steps to reduce sugar content, United Kingdom producers and importers of soft drinks can pay less or escape the charge altogether."

Given the focus on reformulation, along with the considerable administrative capacity available to ensure compliance, a three-tiered tax structure based on sugar content (i.e., grams of sugar per unit of volume) was pursued. Specifically, the levy tiers were established as follows: no tax on beverages with less than five grams of sugar per 100 mL; a £0.18-per-litre tax on beverages with five to eight grams of sugar per 100 mL; and a £0.24-per-litre tax on beverages with more than eight grams per 100 mL. As such, the tax rates were set at different levels depending on the sugar content in the beverages, with drinks containing less sugar being taxed at lower rates, or not at all.

The results of this tiered approach have been promising. By April 2018, when the tax was scheduled to come into effect, HM Treasury reported that 50% of manufacturers had already reduced sugar content, with an estimated reduction equivalent to 45 million kilograms of sugar per year. Correspondingly, the revenue projections for the first year of implementation were revised from £520million to £240million. Public Health England also reported a shift in volume sales towards products that were not subject to the levy, along with an 11% reduction in sugar levels per 100 mL among products subject to the SDIL.

A recent evaluation of the SDIL found that, despite an increase of 5% in the volume of sales of SSB per capita between 2015 and 2018 (from 351 mL per person per day to 367 mL), the volume of sugars sold from SSBs decreased by 30%, from 15.5 grams to 10.8 grams. Another recent study found that by March 2019, the purchased volume of drinks in the high levy tier (products with more than 8 grams of sugar per 100 mL) decreased by approximately 44%, while purchased volume of drinks in the middle tier (products with 5–8 grams of sugar per 100 mL) decreased by approximately 85% compared to counterfactual estimates based on pre-SDIL-announcement trends.

The experience with the SDIL shows that a tiered SSB structure that sets ambitious yet attainable target sugar levels, along with sufficient time between announcement and implementation, can effectively encourage reformulation efforts and can significantly reduce sugar intake from SSBs.

References for text box: (73, 139, 140, 177, 222, 223)

Table 4.1 presents a comparison of different tax designs (organized by the different tax design elements discussed throughout this chapter – tax type, base and structure) in several different categories, including administrative capacity, impact of inflation, behavioural responses and reformulation incentives. It also provides examples of countries that employ these SSB tax designs.

Table 4.1 Comparison of SSB tax designs

	AD VALOREM		SPECIFIC		
	Value-based tax	**Value-based tax (tiered by sugar content)**	**Volume-based tax**	**Volume- or sugar-content based tax (tiered by sugar content)**	**Sugar-content based tax**
Administrative capacity	Some burden to administer: enforcement requires monitoring of tax avoidance through strategic pricing	Some burden to administer: enforcement requires monitoring of tax avoidance through strategic pricing	Simple to administer	Requires significant technical capacity to administer and monitor beverage sugar content	Requires significant technical capacity to administer and monitor beverage sugar content
Impact of inflation	Real value will not be affected by inflation	Real value will not be affected by inflation	Needs to be adjusted periodically for inflation to protect real value	Needs to be adjusted periodically for inflation to protect real value	Needs to be adjusted periodically for inflation to protect real value

	AD VALOREM		SPECIFIC		
	Value-based tax	**Value-based tax (tiered by sugar content)**	**Volume-based tax**	**Volume- or sugar-content based tax (tiered by sugar content)**	**Sugar-content based tax**
Behavioural responses	Encourages trading down (i.e., substitution towards cheaper taxed products)	May encourage trading down (i.e., substitution towards cheaper taxed products)	Does not encourage trading down	Does not encourage trading down	Does not encourage trading down
Reformulation incentives	Does not encourage product reformulation	Encourages product reformulation	Does not encourage product reformulation	Depending on thresholds established, may encourage product reformulation	Encourages product reformulation
Country examples	Kiribati (40% of market wholesale value)	Chile (10% on SSBs with less than 6.25 g of sugar per 100 mL; 18% on all SSBs with > 6.25 g of sugar per 100 mL)	French Polynesia (40 Pacific francs per litre for domestic SSBs and 60 Pacific francs per litre for imported SSBs)	United Kingdom (£0.18 per litre for drinks with 5–8 g total sugar per 100 mL; £0.24 per litre on drinks with > 8 g total sugar per 100 mL)	Mauritius (0.03 Mauritian rupees per gram of sugar)

4.4 TAX RATES

The tax rate refers to the level at which the ad valorem or specific tax is set, and it is determined by the objectives and behavioural responses intended by the policy-maker. The rate at which a tax is first implemented or subsequently raised is both a technical and a political matter. Research to date suggests that excise taxes levied on SSBs lead to a decrease in consumption roughly proportional to the increase in price, although the decrease in consumption is usually slightly smaller than the price increase *(65, 187, 224, 225)*. Specifically, the price elasticity of demand for SSBs is estimated to be within the range of approximately -0.8 to -1.59; with studies estimating elasticities of HICs around -0.8 and similar or greater elasticities for LMICs *(58, 59, 65, 68, 102, 122-128)*. Given a price elasticity of demand value of -1.0, this would mean that a 10% increase in the price of SSBs would lead to an average reduction of consumption of 10%. When considering which tax rate to set, it is instrumental to have estimates of the price-elasticity of demand of SSBs that are

relevant to the given context in which the SSB tax will be implemented (evidence on price elasticity is summarized in section 2.2). Note that the effective net change in prices resulting from a tax rate change also depends on the pass-through of the taxes to prices (evidence of this is summarized in section 2.1).

Low tax rates, or low increases, may be susceptible to a signal-to-noise problem — i.e., they can lead to changes that are too small to detect or to be confidently attributed to the new tax. In the USA, soft drink taxes in the range of 1-8% have not led to detectable changes in BMI, leading to accusations that the taxes do not work at all *(57)*. It is also possible that relatively small tax and price changes such as this are not sufficiently high to alter the underlying affordability of the product due to income growth.

Conventional economic theory suggests that larger tax and price changes are likely to induce bigger changes in consumption, partly due to the signalling effect of such announcements and because higher tax increases tend to be associated with larger declines in purchases and sales *(65, 81, 106)*. Consequently, practitioners have suggested taxes that lead to increases in price of 17.5-20% would be detectable *(81, 226)*. As more countries implement new SSB taxes with varying structures and rates, it is important to continue monitoring and evaluating these systems to further develop empirically based best practices for effective SSB excise tax design.

4.5 COUNTRY APPROACHES TO TAXING SSBs

To date, more than 80 countries have levied taxes on unhealthy foods and beverages according to the WHO Global database for Information on Nutrition Action (GINA). Recent years have seen growing adoption of excise taxes on SSBs. Table 4.2 below highlights 10 examples of SSB taxes levied in various countries and key characteristics of the designs adopted. All countries in the table have opted for specific taxes, with the differences emerging in whether countries levy a tax by volume (in the case of Mexico and Hungary) or by beverage sugar content, and if so whether tiers were adopted (as in the United Kingdom or Ireland) or a linear constant sugar rate (as in Mauritius and South Africa).

Table 4.2 SSB tax designs in selected countries

COUNTRY (YEAR OF IMPLEMENTATION)	TYPE	BASE		RATE
		Products	Taxable characteristic	
Brunei (2017)	Specific	SSBs with more than 6 g of total sugar per 100 mL, soya milk drinks with more than 7 g of total sugar per 100 mL, malted or chocolate drinks with more than 8 g of total sugar per 100 mL, and coffee-based drinks or coffee-flavoured drinks with 6 g of total sugar per 100 mL	Volume (tiered by sugar content)	• 0.40 Brunei dollars per litre (around US$ 0.28)
Hungary (2011)	Specific	Soft drinks (both sugar- and artificially sweetened), energy drinks	Volume (tiered by product type)	• 7 forint per litre (around US$ 0.024) • 200 forint per litre (around US$ 0.70) on concentrated syrups used to sweeten drinks
Ireland (2018)	Specific	Non-alcoholic, water-based and juice-based drinks with sugar content of 5 g per 100 mL and above. Fruit juices and dairy products are excluded from the tax	Volume (tiered by sugar content)	• Drinks with between 5 g and 8 g of sugar per 100 mL are taxed at 20 cents per litre (around US$ 0.23) • Drinks with more than 8 g of sugar per 100 mL are taxed 30 cents per litre (around US$ 0.35)
Mauritius (2016)	Specific	Juices, milk-based beverages and soft drinks	Sugar content	• 0.03 Mauritian rupees per gram of sugar (around US$ 0.0008)
Mexico (2014)	Specific	All drinks with added sugar, excluding milks or yoghurts	Volume	• 1 peso per litre (around US$ 0.05, or 10%)
Oman (2019)	Ad valorem	Carbonated sweetened drinks, energy drinks	Tiered by product type	• 50% on all carbonated drinks except sparkling water • 100% on energy drinks
Peru (2018)	Ad valorem	Non-alcoholic beverages, sweetened waters and 0% alcohol beer	Sugar content (tiered by sugar content)	• 25% on beverages with ≥ 6 g of sugar per 100 mL

COUNTRY (YEAR OF IMPLEMENTATION)	TYPE	BASE		RATE
		Products	Taxable characteristic	
Philippines (2018)	Specific	Sweetened juice drinks; sweetened tea; all carbonated beverages; flavoured water; energy and sports drinks; other powdered drinks not classified as milk, juice, tea or coffee; cereal and grain beverages; and other non-alcoholic beverages that contain added sugar	Volume (tiered based on type of sweetener)	• 6 pesos per litre (around US$ 0.12) on drinks containing sugar and artificial sweeteners • 12 pesos per litre (around US$ 0.24) on drinks containing high-fructose corn syrup
Saudi Arabia (2017)	Ad valorem	All drinks with added sugars	(tiered by product type)	• 50% on all SSBs • 100% on energy drinks
South Africa (2018)	Specific	Carbonates, nectars, concentrates. Dairy products and 100% fruit juices are not included	Sugar content (tiered by sugar content)	• 0.021 rand (US$ 0.0015) per gram sugar above 4 grams per 100 mL
Sri Lanka (2017)	Specific	Carbonated soft drinks and fruit drinks	Sugar content	• US$ 0.30 per gram sugar
United Kingdom (2018)	Specific	Any pre-packaged soft drink with added sugar containing at least 5 g of total sugars per 100 mL of prepared drink	Volume (tiered by sugar content)	• £0.18 per litre (US$ 0.25) for drinks with 5–8 g total sugar per 100 mL • £0.24 per litre (US$ 0.34) on drinks with > 8 g total sugar per 100 mL

Sources: Authors' elaboration based on *(59, 210)*

4.6 CHAPTER 4 MAIN TAKEAWAYS

Excise taxes are the most appropriate tax instrument for SSB taxation. When designing an SSB tax, policy-makers will need to consider what type of excise tax to apply, what products will be subject to the tax, how the tax liability on a given product would be assessed and at what rate the tax would be levied. The prevailing practices in countries implementing SSB taxes is to levy specific excise taxes either by product volume, by sugar content or by volume but tiered by sugar content — the suitability of these practices will depend on the available administrative capacity in a given context.

- The design of excise taxes (including type, structure, base and rates) can influence producer and consumer behaviour in different ways, and so it should be tailored to policy-makers' objectives.
- Countries are increasingly using excise taxes to reduce negative externalities, replacing sales taxes with VAT and, in some settings, reducing import duties.
- Excise taxes are preferred when the objective of a tax policy is to promote health. Excise taxes raise the relative price of targeted products compared to other goods and services, making the targeted products less affordable.
- The tax should have a broad base to avoid incentivizing undesirable substitutions. The tax should thus apply to all categories of SSBs (including sugar-sweetened carbonates, fruit-flavoured drinks, fruit juices, sports and energy drinks, vitamin water drinks, sweetened iced teas and lemonades and sugar-sweetened milk drinks and yogurts, as well as powders, concentrates or syrups used to make SSBs by adding water or carbonated water), but should exclude bottled water.
- Tiered taxes based on sugar content can encourage industry reformulation, but require higher technical tax administration capacity. Due consideration should be given to the available tax administration capacity when considering the implementation of tiered taxes based on sugar content.

CHAPTER 5.

Tax administration and enforcement

The potential for an excise tax to reduce the health harm associated with the targeted products or to maximize potential revenues rests on the effectiveness of the administration of the tax. Broadly speaking, the effectiveness of tax administration refers to the extent to which all those required to pay the tax do so, while efficiency of tax administration refers to the resources required to effectively administer a tax. Two key tasks of tax administration are: the enabling and facilitation of tax compliance for willing taxpayers; and the enforcement of tax compliance for less-willing taxpayers *(227)*. Thus, there are aspects of the tax collection process that do not pertain to enforcement but rather to making the process of paying taxes transparent and easier for beverage manufacturers and importers.

The legal context and institutional organization of tax collection varies widely from country to country and will in large part determine the administration of a tax. Essential to the effective administration of a tax on SSBs is effective coordination between those involved in the facilitation and enforcement of compliance. This chapter outlines some key considerations and principles for the effective and efficient collection of excise taxes, including stages of the tax compliance cycle, particular issues in the administration of SSB taxes and the importance of coordination between actors involved and between countries.

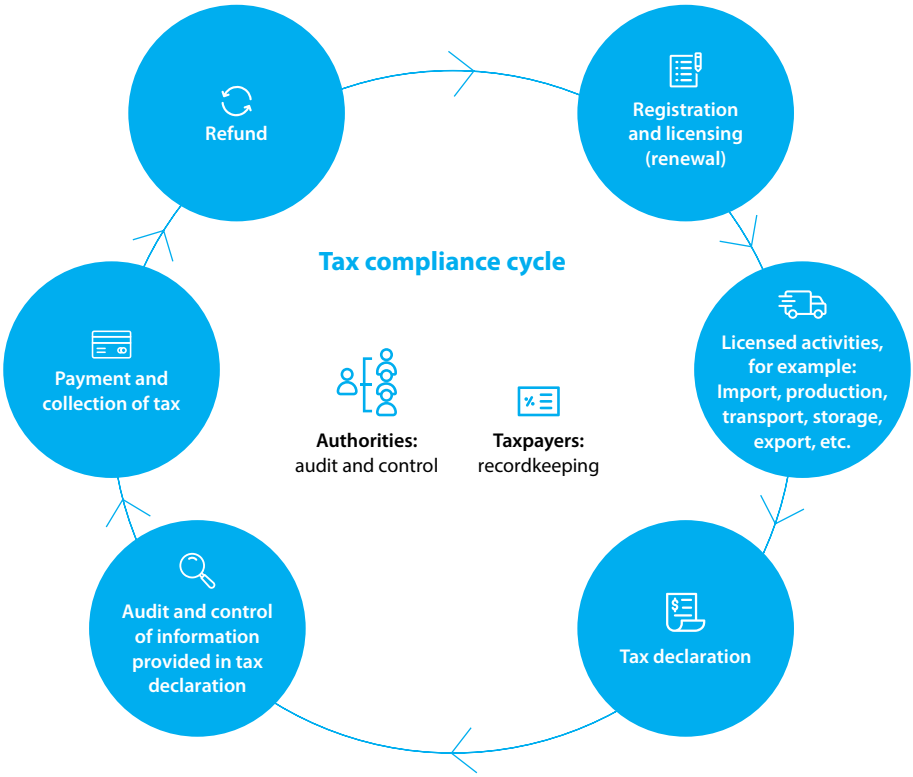
5.1 COMPLIANCE

Many of the concerns regarding administration of taxes on SSBs are common to other excise taxes, and best practices translate across products. In some ways, the levying of taxes on SSBs is more straightforward than on tobacco and alcohol. In particular, the risks of non-compliance and illicit trade are lower as the incentive for tax evasion is significantly lower. This is due to the weight of the products, which increases the costs of tax evasion, and the relatively low market price of SSBs. The extent of controls and compliance required are thus more limited.

Once an excise tax has been implemented, it has to be ensured that economic actors required to pay the tax are doing so appropriately and are compliant with the relevant legislation. With any excise tax, there are a number of processes associated with compliance. These are summarized in the compliance cycle in Figure 5.1 below. In terms of tax administration, the key stages of the compliance cycle are

registration and licensing, tax declaration and recordkeeping, duty suspension and the collection of tax and issuing of refunds.

Fig. 5.1 Tax compliance cycle



Source: WHO technical manual on tobacco tax policy and administration, 2021 *(186)*

Each of the stages of the compliance cycle serves a particular purpose:

- **Registration and licensing** ensure that tax authorities are aware of those producing or importing the taxable product. In addition to providing authorities with information regarding taxpaying entities, including identity, location and bank account information, the registration and licensing of entities can come with requirements for the collection and recording of relevant transactions which can provide tax authorities with useful information on the product's supply chain and instrumental information to identify under-reporters and issue corresponding penalties.
- **Tax declarations** help authorities to identify taxpayers and are an important, and often first, source of information to determine tax due.

- **Tax collection** should take place at source, from the manufacturer or upon import. Collection of the tax earlier in the supply chain reduces the number of taxpayers and with that the resources required for audit and control. Tax payments should be made at fixed intervals of time, with monitoring and the issuing of warnings in the instance of non-payment to keep taxpayers compliant.
- **Audit and control** Periodic audits and controls can be implemented to increase compliance. These can include cost audits, transfer price audits, price and market monitoring, consumer controls and cross-check controls.
- **Refunds** are made in the instance of payment in excess of assessed liability. In the context of excise taxes refunds are commonly made in the instance of the export of the taxed product.

With excise taxes, some degree of non-compliance is inevitable, whether due to ignorance, carelessness or evasion. Administrators need to have strategies and structures to minimize non-compliance *(228)* that may include:

- requiring producers, importers and exporters to register and obtain licences
- monitoring production
- using tax stamps or accounts auditing and
- requiring timely tax returns.

In anticipation of a tax increase, manufacturers may increase production and stockpile goods before the new tax takes effect. A one-time excise tax levied on stocked goods (a floor-stock tax) can counter the perverse incentive to rapidly increase production before the introduction of a new tax.

Tax evasion is generally defined as wilful illegal non-compliance, whereas tax avoidance is an attempt to reduce tax liability through legal means. Examples of tax avoidance include cross-border shopping, while examples of tax evasion include smuggling, illicit production and under-declaring the amount of a taxed ingredient in a product *(229)*. Both tax avoidance and tax evasion reduce revenue and can make SSBs more accessible, available and affordable, thereby countering the objectives of the policy.

Customers may avoid taxes by engaging in cross-border shopping. As the real cost of food taxes tends to be low, this has not been found to be a major problem in any of the jurisdictions that have introduced food or SSB taxes *(53)*. Although widely reported in the media, levels of Danish cross-border shopping following the introduction of its fat tax were in fact minimal *(230)*. There is scope for regional and international cooperation in order to minimize the risk of cross-border shopping, as discussed below.

Companies face costs when they engage in tax evasion or avoidance as these activities require monetary resources, changes in business practice and, in the case of evasion, the risk of being caught and fined. Complex tax rules create loopholes that companies can exploit to minimize their tax liability. A simple and well enforced tax backed by a competent revenue or customs service can help to minimize these tactics. Weak tax laws and weak enforcement, a lack of judicial procedures, slow judicial processes, low penalties, weak governance and corruption can all exacerbate tax avoidance and evasion. Attention to these issues can maximize the impact of food and beverage taxes.

5.2 PARTICULAR ISSUES IN THE ADMINISTRATION OF SSB TAXES

As discussed previously in Chapter 4, sugar-based SSB taxes are desirable for a number of reasons: they differentially target products by sugar content (i.e., quantity of sugar per volume of liquid beverage), they more effectively target the health damage of sugar content and they create direct supply-side incentives for reformulation. However, levying an SSB tax based on the sugar content of products also introduces administrative complexities that do not exist for other tax designs. These complexities arise from the need to determine the sugar content of products to assess their tax liability. In the absence of mandatory labelling regulations, tax authorities require the capacity to independently test the sugar content of taxpayers' SSBs during audit processes. This may require financial and human resources above and beyond those required for the administration of simpler specific or ad valorem tax designs. In addition, laboratory capacity to credibly perform such tests is required.

A further issue of concern related to levying SSBs according to sugar content is how taxpayers declare the sugar content of their products during the self-assessment of their liability. In the absence of independent estimates of their products' sugar content, there is a risk of fraud — specifically that taxpayers could understate the sugar content of their products to reduce their liability. To incentivize compliance, authorities can rely on self-assessed sugar content while also subjecting taxpayers to routine auditing, with the legal penalties associated with the filing of incorrect information. Alternatively, declarations could be required to be submitted along with reports of tests of sugar content provided by credible third-party laboratories.

Moreover, the chosen structure of the sugar-based rate can create differential incentives for under-reporting sugar content. In instances where there are significant reductions in tax liability for a given reduction in sugar content, there may be greater risk of understatement of sugar content. This could arise where a higher rate is set per gram of sugar, or where tiers discretely change the rate by sugar content. This higher risk is associated with a greater need for auditing to ensure compliance.

A particular category of SSB that raises some tax administration challenges is concentrates. Concentrates, in liquid or powder form, are SSBs which need to be diluted with water before being consumed. In some markets these products can make up a non-trivial share of the non-alcoholic beverage market. Concentrates create some complexity in that their retail volume is not their consumed volume, as would be the case with other types of ready-to-drink beverage such as sodas or flavoured waters. As such, if concentrates are subject to a per-volume specific tax, their burden is significantly lower per litre (in diluted form) than ready-to-drink products. On the other hand, if concentrates are subject to a per-gram-of-sugar specific tax, in concentrated form they have much higher sugar content than ready-to-drink products and as such would face a much higher burden. To address this issue, specific taxes on concentrates should be specified per diluted volume. This creates parity with ready-to-drink products in their tax treatment and has been followed by tax authorities in the United Kingdom and South Africa *(231, 232)*. The dilution ratio used for assessing tax liability should be that printed on packaging, but tax authorities should retain the right to impose a dilution ratio if that of the product is significantly different to peers in the market or suspected to be set excessively so as to reduce tax liability.

5.3 INSTITUTIONAL COORDINATION

Across settings, there is some variation in organizations responsible for aspects of tax administration. At a country level, it is common for the collection of excise duties on imports to be the responsibility of customs authorities, while the collection of excise on domestic products is the responsibility of traditional revenue authorities. The involvement of multiple bodies requires especially good collaboration and information-sharing to ensure efficient and effective collection of taxes and duties. This means not only clearly defined roles and responsibilities but also coordination among the competent authorities, customs and those responsible for formulating, analysing and implementing tax policy. Regardless of the institutional arrangements — whether the responsible parties are all within the ministry of finance or in separate government agencies — all parties need to cooperate and exchange information to optimize tax collection and enforcement of tax policy. Coordination and sharing of information can be required in legislation or regulations to ensure a streamlined process and avoid confusion.

At an international level, inter-country relations can strengthen or undermine SSB excise taxes. Cooperation in scientific and legal fields, along with exchange of expertise, information, knowledge and shared approaches to defining and enacting taxes can bolster effectiveness and reduce opportunities for smuggling and cross-border shopping *(233)*. Domestic food prices are also influenced by world currency

fluctuations, climate change, geopolitics and trade tariffs and restrictions. As an example of how these factors can undermine the goal of food taxes, the European Union's Common Agricultural Policy imposes tariffs of 5–20% on imported foods to maintain a competitive European market, which artificially inflates the price of fruit and vegetables in relation to global market prices *(234)*. At the same time, reforms in the sugar sector have seen real prices fall by 50% over the past decade *(235)*. This undermines the efficacy of sugar taxes aiming to promote substitution with healthier alternatives.

5.4 CHAPTER 5 MAIN TAKEAWAYS

- Taxes are only as strong as the agencies that administer them. If enforcement is weak or the tax can be avoided, then the health impact of an SSB tax will be limited.
- To ensure compliance, the accuracy of information for the tax compliance cycle is key, including clear and straightforward taxpayer registration and licensing, declaration, recordkeeping, warehousing, distribution, collection and tax refund processes.
- Effective tax administration comprises both the facilitation of compliance by willing taxpayers and the enforcement of compliance by unwilling taxpayers (or application of penalties for non-compliant taxpayers).
- The administration of excise taxes on SSBs is broadly similar to the administration of tobacco and alcohol excise taxes; however, some considerations need to be made for the broader range of products potentially subject to SSB taxes and in instances where a sugar-based tax is to be levied.
- Key to the effective administration of a tax on SSBs is effective coordination between actors involved in the facilitation and enforcement of compliance.

CHAPTER 6.
Political economy

While the process for implementing an excise tax will vary from setting to setting, along with every country's distinct history, culture and structural forces, the culmination of the policy-making process will ultimately be determined by the political incentives faced by the relevant decision-makers. As such, opponents and proponents of such policies will attempt to sway the decision-makers' understanding of and support for these policies to achieve their preferred outcome — implementation or rejection. This can be done not just through direct lobbying but also indirectly by attempting to sway and influence the general public's understanding of and support for the policies.

Commercial entities in the food and beverage industry, including retailers and hospitality venues whose revenues may be impacted, typically oppose taxes on their products. Often lobbying is used by parties with vested interests to sway policy-makers away from implementing SSB taxes, or to structure taxes in ways that would protect industry profits and mitigate reductions in consumption. These actors often use a predictable set of arguments against the imposition of SSB taxes. Whatever the motivation of those making these arguments, the issues raised should be considered carefully, and any empirical evidence offered on behalf of industry actors to support assertions, as well as potential conflicts of interest from producers of this evidence, should be interrogated. This chapter considers common arguments and tactics used by industry actors opposing SSB excise taxes, details the types of arguments commonly raised in opposition to such taxes and presents evidence-based counter-arguments. It also presents strategies to counter industry opposition to SSB taxes.

6.1 TACTICS COMMONLY USED BY INDUSTRY ACTORS

A well-designed SSB tax will reduce consumption of target beverages and impose some administrative costs on producers. Affected companies therefore have commercial incentives to resist efforts to introduce SSB taxes. In addition to actively lobbying decision-makers and engaging in public consultation processes, the food and beverage industry have been seen to actively oppose new taxes (either directly or via third parties) through mass media campaigns, through media articles/broadcasts and by creating or entering coalitions with other social actors across a range of settings *(236-241)*.

Industry lobbying against SSB tax measures is foreseeable and expected. In the United States, between 2009 and 2010 two large soft drink companies collectively spent US$ 60 million on lobbying against SSB taxes *(242)*. Where SSB taxes were proposed by local government, industry activities included petitioning states to limit the regulatory authority of local government and overwhelming local public health departments with detailed freedom-of-information requests. In Mexico and South Africa, multiple sources have documented the intense lobbying of regulatory entities by direct or indirect representatives of industry interests throughout the policy process, as well as other efforts to systematically obstruct SSB tax policy on behalf of the SSB industry *(144, 190, 238, 243-245)*. Similarly, a study of regulatory initiatives in Latin America to reduce SSB consumption concludes that proposals for a tax on SSBs were defeated due to the industry's strong lobbying in Colombia and Argentina in 2016 and 2017, respectively *(246)*. The case of industry lobbying in Colombia is detailed in Box 6.1. In Ireland, strong industry opposition to the tax was also documented alongside the various framing strategies used to influence policy-makers *(247)*. Of note, there is often a strong resource and access imbalance between commercial actors opposing SSB tax policies and public health groups advocating for the policies.

Globally, the arguments used by the food and beverage industries when lobbying to oppose SSB taxation mirror the same well-financed SCARE tactics made famous by the tobacco industry to prevent, weaken or delay implementation of taxes *(186, 188)*. The following subsections dissect the industry's framing of each argument, pinpoint the flaws, identify the extent to which each concern has merit and suggests how a responsible government can address each one. These discussions are supported by evidence from independent, peer-reviewed research, as well as specific examples from country experiences.

Box 6.1 Industry pressure crushes the SSB tax in Colombia

Colombia is the only country in Latin America that has tried and failed twice to introduce an SSB tax. The first attempt took place in 2016, with a proposal to establish a tax of 20%. This was spearheaded by the Ministry of Health and supported by several distinguished academic institutions and civil society organizations. After gaining support from the finance ministry, the proposal was incorporated into a broader tax reform bill. Once this was introduced to the Colombian legislature, a fierce backlash began from groups defending beverage industry interests. The pressure came from many angles. As expected, lobbyists told Congress that SSB taxes do not reduce consumption — despite international evidence to the contrary. The pressure was perhaps strongest in the mass media, as supporters and opponents tried to use media outlets to sway and influence the general public's understanding of, and support for, the SSB tax policy.

Although tax supporters, including civil society organizations, tried to mobilize a public awareness campaign through mass media, their efforts were debilitated by industry support groups. As with experience in other countries, announcements in support of the SSB tax were countered with articles in magazines or statements on radio or television. The pressure escalated when a civil society–backed television ad that warned consumers of the health consequences of SSB consumption was met with a formal complaint to the government on behalf of one of Colombia's leading beverage companies. Although health experts stated the ad was backed by empirical evidence, the head of the agency where the complaint was filed (a political appointee) sided with the industry petitioners. As a result, the ad was taken off air and employees from the sponsoring civil society organization were prohibited from publicly speaking about the health risks of sugar consumption. There were also reports that an editor of a media outlet was fired after publishing opinion pieces in favour of SSB taxes. In addition to the pressure in Congress and mass media to remove the proposal from the tax reform bill, anonymous harassment of activists favouring the tax was also reported (though the perpetrators of the harassment were never identified). Ultimately, the SSB tax proposal was rejected by Congress. Colombia's experience shows how industry efforts and the asymmetrical power dynamic between industry and civil society organizations can undermine support for SSB taxes. In 2020, renewed efforts were made to pass an SSB tax, but it failed to pass Congress once again in 2021.

Sources: (189, 248, 249)

6.1.1 SCARE TACTIC "S": SOWING DOUBT BY DISCREDITING SCIENCE AND DIVERTING ATTENTION

A tactic commonly used to oppose SSB taxes by vested interests is seeding doubt as to the effectiveness of the policy by claiming that there is a lack of evidence, or that evidence is inconclusive *(144, 245, 250, 251)*. The industry argues that SSB taxes are unlikely to produce changes in purchases and consumption. Their argument follows that, if taxes do not induce changes in consumption behaviour, they cannot induce the population dietary and health improvements they aim to achieve. With this argument and others, it is important for policy-makers to carefully assess where evidence comes from, because industry-funded evidence has been found to be more likely to come to conclusions that accord with commercial interests *(252-255)*.

Beyond claiming that SSB taxation is ineffective, there are examples of the food and beverage industry misusing evidence to influence health policy. Industry has funded high-profile scientists and private sector research consultancies to conduct studies that are designed to skew results to dispute the effectiveness of the measures

and distract policy-makers. Additionally, evidence from South Africa shows that parts of the industry use references in misleading ways to promote alternative narratives to the high and growing burden of diet-related NCDs, going as far as to dispute the role that SSBs play in diet-related diseases *(144, 244, 254, 256, 257)*.

As detailed in Chapter 2, robust independent evidence (from modelling, observational and experimental studies) on the effectiveness of SSB taxes, albeit relatively novel, demonstrates that taxes of sufficient magnitude in fact increase prices, while reducing sales and consumption. Although taxes that are small in magnitude or scope may not produce significant changes in purchases, there is now a large and growing evidence base that, when taxes are well-designed and administered and set at a sufficient rate, they do induce meaningful changes in sales and consumption of the targeted beverages and induce substitution towards healthier non-SSB options, such as water.

The food and beverage industry often tries to divert attention from SSB taxes along two tracks: shifting the focus away from SSBs as an important contributor to diet-related NCDs; and shifting focus to other weaker interventions to question the appropriateness of the proposed policy.

When seeking to shift the focus away from SSBs as an important contributor to diet-related NCDs, the industry frequently relies on two related strategies. First, it tries to move attention away from SSBs as a contributor to the rising burden of diet-related NCDs, and towards focusing on increasing physical activity. Specifically, a common argument is that weight control is an issue of caloric imbalance and that lack of physical activity and bad diet bear a higher degree of blame than SSBs *(245, 258)*. Consequently the industry promotes physical activity and sports events to detract attention from less-healthy food and drink products *(259)*. In fact, a recent study of the corporate political activity conducted by major food and drink transnationals in Latin America and the Caribbean reports that several companies with SSB portfolios have launched physical activity initiatives to educate about healthy lifestyles while simultaneously promoting their products *(260)*.

The second related strategy used by the industry is to shift focus from individual products to unhealthy diets. It is true that diet-related NCDs are not monocausal, that current measures are not sufficient to control diet-related health problems, and that evidence indicates that reducing calorie intake is the most effective way to foster weight loss. But it is also true that SSBs provide a high concentration of easily absorbable sugar and calories that individuals on average do not compensate for by reducing intake of other caloric sources, and that the high calories consumed via SSBs are difficult to offset with exercise *(258, 261-263)*. Moreover, as mentioned previously, SSBs are an important contributor to excess free sugar consumption in many countries while providing little or no added nutritional value.

The industry also often tries to shift attention from SSB taxes to other interventions. In the course of the introduction of the new tax, industry figures with vested interests may accept the premise of the policy (i.e., that there is a significant obesity and diet-related disease burden that is attributable to excess free sugar consumption) but will suggest that alternative approaches allegedly would be more effective than a new tax. Critically, many of the suggested alternative approaches may not be effective or may have a weaker evidence base. While it is important that a multi-pronged policy strategy is adopted to enable food environments that facilitate individuals to make healthier choices and consume less sugar, this should not preclude the adoption of an SSB tax in the short run. Some of the alternative approaches commonly suggested by industry for diet-related disease prevention include physical activity initiatives, education/health literacy campaigns and industry self-regulation.

Physical activity

As mentioned above, the food and beverage industry often champions physical activity interventions as alternatives to SSB taxes *(258)*. For example, the industry in South Africa promotes physical activity and physical education programs as the solutions to rising rates of NCDs *(264)*. Evidence suggests that, much as with tobacco, SSB companies engage in Corporate Social Responsibility (CSR), including physical activity initiatives, when profits are threatened in order to improve a firm's standing with the public and policy-makers and ultimately to moderate the risk of regulation *(265)*. Accordingly, CSR may be understood as a public relations strategy to improve a corporation's public image and distract from regulatory or fiscal actions that would affect the corporation's private interest.

While increased physical activity is essential in the fight against obesity and diet-related NCDs, it should be seen as a component to promoting healthier diets and not as a substitute for SSB taxes, particularly because the role of physical activity is relatively small compared to the role of diet, and because physical activity accounts for a much smaller population-attributable risk fraction than diet in the global burden of disease *(258, 261, 262)*. Moreover, while SSB taxes are a population-level intervention, physical activity interventions tend to be targeted, having a more limited reach. Nonetheless, these interventions can and should be complementary. For example, SSB tax revenue might be used to fund physical activity interventions.

Education/health literacy

Another intervention championed by industry to divert attention is that of education/health literacy campaigns. Industry advocates may argue that rather than incentivising reduced SSB consumption through taxation and pricing, authorities should devote efforts to educating the public on healthy eating and improved personal choices *(250)*.

Through this the industry attempts to hold individuals responsible for their own health without taking responsibility or assuming any liability for the unhealthy products they market and the food environment to which they contribute: they attempt to shift the focus away from corporate responsibility to personal responsibility *(190, 265)*. Moreover, while SSB taxes are a population-level intervention with progressive health benefits (lower-income populations disproportionately benefit in terms of health impact), education measures can disproportionality benefit high-income groups and widen socioeconomic health inequities *(266)*.

Nonetheless, as in the case of physical activity campaigns, it should be noted that while education is indispensable in improving population health and ought to be fully supported, it should be seen as a complement to promoting healthier diets and not as a substitute for SSB taxes, which contribute to healthier food environments. Similarly, as with the complementarity between physical activity interventions, SSB tax revenue could also be used to fund education/health literacy campaigns. For example, Seattle's SSB tax revenues are used in part to support "healthful eating and education initiatives" *(267)*.

Voluntary regulations

Beyond championing physical activity and education initiatives, some industry actors argue that rather than subjecting their products to taxation, they should be given the opportunity to voluntarily take steps to address harmful consumption of their products. For example, a systematic mapping of industry strategies in the parliamentary process of adopting an SSB tax in South Africa notes that "most industry actors proposed alternative action to the SSB tax, either by highlighting existing action the industry was taking to prevent obesity or arguing for self-regulation or voluntary actions industry could adopt in future"*(238)*. Again, this is a strategy to divert attention from SSB taxes — a cost-effective, evidence-based measure, which, along with other regulatory measures, threatens industry profits — to a measure they control and can backtrack if their profitability is threatened *(268)*.

Self-regulation can include product reformulation, pledges not to market products to children and restricted advertising. While meaningful voluntary action should be applauded, industry pledges to reduce marketing and advertising have generally been ineffective in contributing to public health objectives, and they should continue alongside other mandatory policies such as taxation. Given the high and increasing rates of diet-related death and disease, country experiences in the EU as well as in Mexico show that self-regulation achieves few advances and does not produce the expected results *(190)*. Since there is no enforcement mechanism for self-regulation, any so-called commitments industry makes often see no follow-up *(246, 269)*.

Research supports what common sense suggests; while it is possible that industry self-regulation (e.g., through incremental reformulation) can lead to reductions in consumption, it is much less effective than binding regulation. It should be noted that the purpose of food and beverage corporations is to make money for their shareholders, so their interest is to sell as much as possible, not to help reduce consumption. Nor are they concerned with externalities of overconsumption, such as health harms and related government expenses. Unless a government is prepared to follow through with corresponding regulation, ultimatums — such as statements from government that, if industry can reach the targets set through voluntary action, there may be no need to introduce a tax — should be avoided. In the case of Canada and trans fats, the ultimatum approach backfired when politicians defaulted on their threats *(270)*. Ultimately, SSB taxes and industry self-regulation are not mutually exclusive, but self-regulation is definitely not a substitute for regulatory measures.

In light of industry's attempts to divert attention from SSB tax policies by championing alternative interventions, it is important to highlight that such taxes should ideally be implemented as part of a comprehensive policy package, including health-communication strategies and regulatory measures that improve nutritional information and/or restrict the marketing of unhealthy foods to children. Implemented together these interventions achieve greater health gains than individual interventions and even project a more promising cost-effectiveness profile *(162)*.

Infringement on individual rights

Lastly, in addition to suggesting alternative approaches to diet-related disease prevention to divert attention away from SSB taxes, the food and beverage industry — often through industry front groups or allied groups such as think tanks, or so-called "astroturf" (i.e., artificial grassroots) campaigns — also tend to divert attention by suggesting that SSB taxes infringe personal liberties. For example in the United Kingdom, a lobby group that does not disclose its funding sources, claims that "the sugar tax is the nanny state at its very worst" and that "the sugar tax represents an unacceptable infringement on personal liberty and freedom of choice" *(271, 272)*. Similarly, in a survey of key opinion leaders in Israel on SSB and unhealthy food taxes, one of the arguments was that the action would be paternalistic and impede the freedom of choice of individuals *(273)*. Of note, taxes do not remove or restrict choice; they make unhealthy choices more expensive *(274)*. Moreover, as discussed in the economic rationale section for taxing SSBs, there are several market failures, including negative externalities imposed on society, that excise taxes can seek to account for (Pigouvian taxes). The paternalistic argument was also previously used in opposition to tobacco excise taxes, which are now applied in the vast majority of countries *(186)*.

Contrary to industry claims that SSB taxes infringe on personal liberties, SSB taxes — along with other policies to improve food environments — protect and advance fulfilment of a series of individual human rights, including the right to enjoy the highest attainable level of health and the right to food *(144, 275-280)*. In fact, special rapporteurs on the right to food and the right of everyone to the enjoyment of the highest attainable standard of physical and mental health have called for governments to implement taxes on unhealthy foods and recommended taxes on SSBs *(281, 282)*. In addition, the Special Rapporteur on the right to health claimed that "where States have enacted legislation as part of national health policies to discourage consumption of unhealthy foods and promote healthier options, the food industry has the responsibility to comply with such laws and desist from undertaking activities that would undermine these policies" *(281)*.

6.1.2 SCARE TACTIC "C": COURT AND LEGAL CHALLENGE THREATS

The food and beverage industry views well-designed SSB taxes that are of sufficient magnitude to influence consumption behaviour as a threat to the profit, growth and long-term sustainability of its business. As such, industry actors may make or threaten legal challenges to SSB tax policies. Industry actors have claimed in some cases that SSB taxes breached domestic or international law.

Domestically, legal challenges might be threatened on the basis that the tax is unconstitutional or inconsistent with other domestic laws, that the implementing government agency or decision-maker lacks the legal authority to levy the tax (*ultra vires*) or failed to observe due process in the policy process, or to afford procedural fairness to stakeholders impacted by the tax *(188, 283)*.

It is not uncommon for industry opposition to an SSB tax to include a claim that the tax violates international trade or investment commitments, including claims that the tax is inconsistent with World Trade Organization (WTO) law or regional tax or customs agreements. For example, legal challenges may be threatened on the grounds that the tax is discriminatory, whether on the face of the tax or in its effect, in that it discriminates between like products — for example on the basis of country of origin (in violation of national treatment principles) or product type. The industry may also make claims of discriminatory taxation of specific food and beverages, suggesting that the policy ignores other sources of sugar in diets *(172)*. These challenges have slowed efforts to expand the scope of existing taxes on less-healthy foods *(284)*.

Challenges have been threatened against SSB taxes in EU countries on the grounds that SSB taxes would constitute illegal state aid to similar or substitution products that do not attract the tax, on the grounds that the tax thus distorts or threatens to distort competition and is incompatible with EU law to the extent that it affects trade between

states. For example, the Finnish Food and Drink Industries' Federation successfully delayed a planned increase in the tax rate on confectionery after filing a complaint with the European Commission (EC) focused on its lawfulness *(237)*. By contrast, the EC's assessment of the Irish SSB tax (ahead of implementation) is an important precedent, as it held that the Irish SSB tax on products containing added sugar and with a sugar content exceeding a set threshold is consistent with the health objectives pursued and does not unduly distort competition or constitute illegal state aid *(285)*.

The threat of legal challenges (whether the challenge has merit or not) can cause so-called "regulatory chill," where governments delay, amend or withdraw planned tax policies to avoid a lawsuit. For example, a case study on the Estonian SSB tax development process reports that the industry used an array of false claims, including that the policy was unconstitutional and violated European Union law, to deter policy-makers from moving forward *(197-199)*.[6]

SSB policies can be developed in a manner that strengthens the government's position in the event of legal challenge. In broad terms, in relation to domestic challenges, policy-makers pursuing SSB tax policies should ensure that procedural requirements (including public consultations) and due process are followed in the drafting and implementation of the measure *(236)*. Policy-makers should work with government lawyers to ensure that they have an appropriate legislative mandate to implement the planned SSB tax and that the tax is consistent with other domestic laws.

In considering international legal commitments, governments should bear in mind that WTO agreements and many other multilateral, regional and bilateral trade agreements recognize health as a legitimate policy goal. These instruments generally include exemptions to allow countries to introduce health-related policy measures, provided they are necessary and proportionate to achieve a legitimate public health objective and are not more trade-restrictive than necessary *(286)*. Care should be taken to align the SSB tax policy with applicable exemptions, to ensure that the tax does not discriminate between like products and that the measure is based on evidence that it is likely to achieve legitimate public health policy objectives.

For example, a tax designed so that the tax liability depends on the composition of the product, such as sugar content, and does not discriminate between similar products of different origin and in which product differentiation is justified and evidence-based is less likely to be deemed discriminatory. The contribution that the tax (including any tax distinctions between different product categories) is expected to make to public health objectives should also be clearly stated, justified and substantiated by evidence.

6 The SSB tax in Estonia was not implemented as planned in January 2018, it is in stasis in the Finance Committee of parliament after having been vetoed by the President who was in office in 2017.

In the case of SSB taxes, it is important to emphasize that SSBs play a uniquely important role as a source of free sugar in the diet, with little to no nutritional value. Policy-makers should be prepared with country-specific epidemiological data and evidence (detailed in Chapter 3) substantiating the ways in which SSB taxes are expected to contribute to achieving public health objectives.

Several countries have successfully defended legal challenges to SSB taxation policies under domestic as well as international trade and investment law *(59)*. While policy-makers should take measures to strengthen the government's position against potential legal challenges in advance by developing robust and well-designed SSB tax policies, including by considering the elements mentioned above, legal threats should not necessarily impede efforts to advance SSB tax policies.

6.1.3 SCARE TACTIC "A": ANTI-POOR RHETORIC OR REGRESSIVITY

A common argument levied against the introduction of SSB (and other) taxes is that they will disproportionately hurt the poor *(62, 144, 188, 190, 238, 283)*. This is motivated by the notion that consumption expenditure and tax paid as a share of income can be greater among those with lower incomes than those with higher incomes *(61, 62, 79)*. In other words, a tax may be regressive if the tax burden tends to be relatively higher for lower-income households than for middle- and high-income households. However, there are two important limitations to this argument.

First, the concept of regressivity based solely on tax burden does not consider the wider health and economic harm caused by excess SSB consumption. Low-income individuals in many countries consume more SSBs than other income groups and are consequently disproportionately impacted by health conditions linked to over-consumption of SSBs, including obesity, diabetes and other diet-related diseases *(30, 287-289)*. Likewise, the associated cost of treatment represents a higher burden for these low-income households as well, such that appropriate treatment may be foregone due to financial constraints *(290-292)*.

Second, SSB taxes that result in higher prices can induce behavioural change among the population, as reflected in the price elasticity of demand — and different income groups have different elasticities of demand. Low-income households demonstrate significantly greater price sensitivity with respect to SSBs (and other excisable products), meaning they are likely to decrease consumption of taxed products by a greater degree *(57, 62, 68, 293)*. In fact, evidence from the SSB tax in Mexico consistently shows that the decrease in purchase of taxed SSBs is largest among lower-income households that previously consumed more of the taxed products before the implementation of the tax *(116, 119, 294)*. Findings from systematic reviews also conclude that the relative health benefits of an SSB tax tend to be greater for low-income households *(57, 76)*.

As such, tax-related price increases are likely to produce greater dietary improvements in low-income households than among higher-income populations. By decreasing consumption and improving diets to a greater extent, lower-income populations are also more likely to reap greater health benefits from SSB tax policies. This, alongside the financial and institutional barriers to accessing healthcare, suggests they would experience greater health and financial benefits (from averted health care costs and lost productivity) than higher-income populations.

In combination, these two considerations effectively make SSB taxation a progressive — rather than regressive — public health intervention. Moreover, since across settings and diseases the poor have been found to have more limited access to health care services due to financial and other barriers, the health benefits arising from SSB taxes and similar intersectoral NCD prevention policies can accrue to a greater extent to the poor. In fact, evidence from an extended cost-benefit analysis in Kazakhstan that evaluates the distributional effects of an increase in taxes on SSBs on household expenditures, out-of-pocket (OOP) medical expenses and productivity by income deciles, found that the net income effect is progressive in the long run, with lower-income deciles benefiting more than other income groups *(133)*. As such, these outcomes effectively make SSB taxes a progressive health policy. To increase the progressivity of the intervention, and potentially enable more political support, the revenues of the SSB tax could be dedicated to social or health programs to further benefit socioeconomically disadvantaged groups *(94)*.

6.1.4 SCARE TACTIC "R": REVENUE INSTABILITY

In their efforts to lobby against SSB taxes, the food and beverage industry and its affiliates often claim that the tax will not yield the expected revenue, or that increases to existing taxes may negatively affect revenue yields *(190)*. For example, although the SSB tax in Philadelphia generated more than US$ 200 million in its first three years, it failed to meet revenue expectations — which has been used by opponents to try to undermine support for the tax *(295)*. As described earlier, the impact on health and revenues of a health tax depend in large part on how the tax is designed and administered. Policy-makers need to be aware of the disadvantages and advantages of the different tax design alternatives to make sure alignment with their objectives. Denouncing taxes based on short-term impact data is common, and policy-makers need to be clear from the outset about the primary objective of the tax (whether it is to mobilize revenue or decrease free-sugar intake), the indicators they will use to gauge success (which will be different depending on the stated objective) and the time lag that may be associated with outcomes data.

Country experience shows that SSB taxes can generate additional revenue and that this can be significant, especially as a proportion of government spending

on health *(145)*. As countries, and particularly low-and middle-income countries, struggle to finance economic recovery programmes and take on higher public debt in light of the COVID-19 pandemic, SSB excise taxes can present a new stream to boost revenues and bridge spending gaps *(296)*.

6.1.5 SCARE TACTIC "E": EMPLOYMENT IMPACT

An argument commonly raised by vested interests about SSB taxes is the threat of diminished economic activity. In particular, the industry argues that there could be considerable employment costs (in beverage manufacturing, crop agriculture, food retail, etc.) as well as across the economy more generally and in reduced foreign investment *(93, 236, 238, 244, 245, 297-300)*.

However, there is very limited independent empirical evidence to support these concerns. Critics often rely on modelling studies produced by industry-funded consultants and do not conform to reporting standards for academic research and are not subject to peer review. Assumptions made in industry-funded modelling studies of the economic impact of health taxes provide only a partial picture of the results and generate conclusions that exaggerate the consequences for employment *(300)*. For example, if substitution of household expenditures is not taken into account, resulting estimates will reflect gross employment changes rather than net employment changes. Gross employment changes will not account for households shifting expenditure away from the taxed product towards other non-taxed products, and the economic activity in employment and displacement of SSB-related jobs to other sectors *(301)*.

Moreover, industry-funded studies place an emphasis on the short-term economic and employment impact, ignoring the longer-term economic benefits of improved population health and longevity due to reduced SSB consumption and improved diet *(302)*. NCDs, such as those associated with excess SSB intake, can have macroeconomic impact through worker absenteeism, early retirement, premature mortality and family members of NCD patients leaving or reducing paid work to undertake caring responsibilities. Often the beneficial impacts of NCD prevention policies, such as SSB taxes, are not taken into account in the modelling exercises offered by industry interests and their consultants.

Independent empirical evidence finds no change to employment rates following the implementation of SSB taxes; this is because any job losses in the taxed sector are typically offset by job gains in other non-taxed sectors *(283)*. For example, a systematic review of studies of the economic impact of diet-related fiscal policies (primarily SSB taxes) found no robust evidence demonstrating drops in employment, nor any evidence of broader negative economic effects from their implementation *(298)*. Evidence from Mexico, as well as San Francisco and Philadelphia, also

indicate that there are no negative consequences on employment rates resulting from SSB taxes *(303-305)*. A study from Mexico that assessed changes in manufacturing industry, the commercial sector and national unemployment rates, concluded that no employment reductions were associated with the SSB and nonessential energy-dense food taxes implemented in Mexico in 2014 *(303)*.

Similarly, a synthetic control analysis was conducted to evaluate employment outcomes two years after San Francisco introduced an SSB tax and found no evidence of harmful effects on net employment, employment in the private sector or employment in SSB-related industries *(304)*. A recently published review of labour market impacts of local SSB taxes in the United States similarly finds no evidence of net job losses, or job losses in industries that produce or sell SSBs and concludes that "real-world findings likely differ from predictions made by industry-funded simulation studies because those studies did not fully account for substitution effects, reallocation of consumer spending and increased government spending of new tax revenue" *(306)*.

Besides the lack of impact on employment rates, it is also worth considering the role that SSB taxes may have on productivity gains by averting death and disease. A study in Australia sought to quantify the impact on lifetime productivity of a 20% tax on SSBs and concluded that productivity gains and averted health care costs would be significant, with productivity gains accounting for AU$ 1900 million and averted health care costs exceeding AU$ 420 million *(307)*.

Despite the mounting empirical evidence against the industry's claim that SSB taxes lead to increases in unemployment, since these job losses are offset by job gains in other sectors, the industry continues to prey on economic fears by threatening to close factories if taxes are introduced *(308, 309)*. Policy-makers should be aware of exaggerated industry claims regarding the impact of SSB taxes on unemployment rates as well as other adverse economic consequences. The argument on the negative economic effect of SSB tax policies can be very powerful politically, such that it is advisable for supporters of SSB tax policies to establish from the outset what the independent evidence says about potential economic effects.

6.1.6 OTHER TACTICS: CROSS-BORDER SHOPPING/ILLICIT TRADE

Industry will sometimes claim (although it is not the most-used argument against SSB taxes), that higher tax rates and higher prices strengthen the financial incentives for cross-border shopping and for criminal enterprises to supply SSBs from lower-tax jurisdictions and boost domestic tax evasion *(93, 283)*. For example, opposition by the industry in Denmark, which included claims of significant cross-border shopping from Sweden and Germany, led to the repeal in 2013 of an SSB tax that had been in effect since the 1930s *(59)*. Compared to other products such as tobacco,

there is likely to be little tax avoidance and evasion in response to an SSB tax, as the profitability of smuggling SSBs is relatively low compared to smuggling tobacco or alcohol *(123)*. A recent evaluation of the SSB tax in Seattle, in the United States, found no changes in the volume of taxed beverages sold in Seattle's two-mile border area after the levy was introduced. *(310)*. The strength of governance and the presence of informal distribution networks have a greater effect than tax and price levels in driving tax avoidance and evasion *(286)*. The threat of illicit trade or cross-border shopping should not undermine efforts to implement an SSB tax.

6.2 POLITICAL ECONOMY FACILITATING FACTORS

Interference from the food and beverage industry in the policy development and implementation process is a clear barrier to advancing SSB tax policies. Policy-makers should keep in mind the inherent conflicts of interest that industry involvement presents for the policy-making process, and governance mechanisms should be put in place to safeguard the process. Besides safeguarding the process, there are strategies that policy-makers can employ to support the adoption of an SSB tax and counter industry opposition. These strategies include: using strong scientific evidence, building a multisectoral coalition of support, developing a comprehensive advocacy strategy, and strategically framing the tax.

6.2.1 USE OF STRONG SCIENTIFIC EVIDENCE TO SUPPORT POLICY

Empirical evidence should be at the centre of each stage of the policy cycle: in the identification stage (justifying why an SSB tax is a relevant and appropriate intervention), the policy development stage (ensuring design aligns with stated objectives), the policy implementation stage and policy monitoring and evaluation stage. For example, as mentioned in Chapter 3 on building a case for SSB taxes, evidence should be gathered on the extent of the health and economic burdens as part of the identification stage, including, if viable, evidence of this in the jurisdiction implementing the tax. Similarly, to anticipate and counter industry opposition in the development, implementation and evaluation stages, it would be advisable to have country-specific evidence related to the common arguments against SSB taxes explored in this chapter (negative impact on employment, regressive impact of the policy, etc). Having a strong evidence base to support each stage in the policy process will help make the SSB context-appropriate, may help increase both public and political support and ultimately strengthen the feasibility of the SSB tax policy *(144, 188)*.

Beyond having the evidence base available, it is also important to consider translating this for policy-makers who are involved in the process, yet are not experts in public health or economics and whose attention may be lost quickly if information

is presented in an overly technical manner *(144)*. Identifying the type of evidence that resonates with each key stakeholder is important to enable such translation. For example, as mentioned in Chapter 3, ministry of finance officials will respond very differently to a case made on the basis of health impact versus a case made on the basis of negative externalities. Moreover, it is also important to consider that individuals are more likely to believe information from sources they trust. Therefore, the channels of information through which the evidence base is presented to each group of policy-makers should also be considered.

Some governments may not have the resources to conduct the necessary research internally, in which case evidence either from other relevant or similar contexts can be used (for example, evidence from the same region or countries with similar demographics, cultural ties or with similar health and economic or development profiles) or partnerships can be established with academics or civil society organizations to build the necessary evidence base.

6.2.2 BUILD A MULTISECTORAL COALITION OF SUPPORT

A strong multisectoral coalition of support both within government (ministry of finance, ministry of health, ministry of agriculture, ministry of labour, etc.) and beyond government (civil society organizations, academics, community and consumer advocacy groups, etc.), is an important factor in facilitating the development and implementation of SSB tax policies *(144, 188)*.

Country experiences show that an early multisectoral engagement approach within government (engagement of health, finance, agriculture, trade/commerce, as well as legislative and executive branches) helps the development and implementation of SSB tax policies *(188)*. Multisectoral engagement can facilitate involvement of relevant stakeholders throughout the policy process, alignment of policy priorities and policy coherence, all of which help build political support and enable the development and implementation of SSB tax policies, along with strong political leadership *(144)*. Similarly, non-state actors such as academics or civil society organizations can be key allies. They can play a pivotal role in rallying communities around an SSB tax as well as help counter undue pressure from food and beverage companies, develop relevant country-specific evidence to counter exaggerated or misleading industry claims, and monitor policies and ensure their appropriate implementation and enforcement *(123, 188, 245)*. For example, the implementation of the SSB tax in Berkeley, California, in the United States is credited in part to the strong social mobilization of civil society organizations, who helped build public support *(123)*.

Ultimately there is a broad array of stakeholders with different perspectives and motivations who could be invested in the successful implementation of an SSB tax. Their understanding, engagement and support can make the difference between

successfully adopting an SSB tax policy or not. Identifying key stakeholders early, and understanding their drivers and concerns, is essential so that strategies can be planned proactively and messages can be tailored in a manner that will be more likely to resonate. For example, in engaging ministry of labour officials, one of their key concerns may be the impact of said tax on employment, but actively engaging them early in the process with a strong evidence base to counter any claims of a negative impact may increase the likelihood of support.

Box 6.2 A political champion leads the way for SSB taxes in the Philippines

After an initial proposal in November 2015, the Philippines implemented a tiered SSB-specific excise tax in 2018 as part of its Tax Reform for Acceleration and Inclusion (TRAIN) Act. For drinks containing sugar and artificial sweeteners a tax rate of 6 Philippine pesos per litre (around US$ 0.12) applies, while for drinks with high-fructose corn syrup a higher rate of 12 pesos per litre (around US$ 0.24) applies. The successful passage of the SSB tax is largely attributed to a committed political champion, Representative Estrellita Suansing, a first-term lawmaker who had personally been affected by the loss of loved ones due to diet-related diseases presumed to have been caused by high consumption of SSBs.

She originally proposed the bill in 2015 in the House of Representatives (House Bill 3365) during the 16th Congress, but it failed to reach the plenary sessions. Undeterred, she refiled the bill (House Bill 292) the following year during the 17th Congress. During the approval process, predictably, there was substantial opposition from industry actors. Throughout this process Rep. Suansing acted as the face of the measure, sharing personal testimony and evidence-based figures to counter industry claims and rally support.

Among the government agencies that backed the proposed bill were the Department of Finance, Department of Health, National Economic and Development Authority, Food and Drug Administration, Philippine Health Insurance Corp. and the Department of Foreign Affairs. In 2017, the SSB tax — with the objectives of improving health, raising revenue and supporting broader ongoing human capital development and universal health care reforms — was added and passed as part of the TRAIN Law, a broader tax reform package. The experience from the Philippines demonstrates the importance of having a committed champion to usher the bill through the legislative process.

Sources: (210, 311, 312)

6.2.3 DEVELOP AN ADVOCACY STRATEGY

Increasing community awareness and building public support through a timely, targeted, easily understood and context-relevant communications strategy is one key factor for facilitating the uptake of an SSB tax *(144, 245)*. Some experts maintain that "the success or failure of an SSB tax can depend on public campaigns carried out by pro-tax and anti-tax campaigners" *(188)*. As such, it is essential to consider a timely advocacy strategy and engage a coalition, including civil society, in mobilizing support for the SSB tax. For example, in Mexico a media advocacy strategy set forth by a coalition in support of the SSB tax was implemented well in advance of industry media efforts to undermine the tax, allowing advocates to frame the problem and the solution in a manner that would inspire public support *(245)*.

The WHO's *Fiscal policies for diet and prevention of noncommunicable diseases technical meeting report* underlines the importance of rallying civil society and health professionals to counter opposition *(81)*. The report also recommends informing the public about the positive health consequences of new taxes and proactively addressing potential negative effects to maintain support. The lack of wholehearted supporters likely harmed the Danish fat tax, which was ultimately repealed. It is possible that the backing of respected and high-profile nutritional experts, as well as celebrities and political champions, may have lent extra credibility to the policy *(202)*. If polls demonstrate a democratic mandate for a measure, this can be another powerful asset in liberal democracies. Useful toolkits for grassroots advocates of taxes on SSBs have been developed, amongst others, by Action for Healthy Food and John Hopkins University *(245, 313)*.

6.2.4 STRATEGICALLY FRAMING THE TAX

The way a proposal is portrayed influences its chances of success *(314)*. Framing is the "conscious and strategic effort by groups of people to fashion shared understandings of the world and of themselves that legitimize and motivate collective action" *(315)*. The story that accompanies the tax, along with the portrayal of the problem and solution, are part of the frame. For example, the Finnish food tax was presented to the public primarily as a means of raising revenue, whereas the Mexican taxes were framed in terms of addressing a national diabetes and obesity epidemic, as well as a way to fund public water fountains. Effective framing is credible (people should understand it to be truthful), salient (the issue matters to them) and takes account of differing views and cultural values attached to food and beverages *(316, 317)*. There is evidence that negative framing receives less support than positive framing for the same issue *(318)*.

As mentioned in Chapter 3, the framing should evidently align with the identified primary objective, as well as with the design of the SSB tax policy. If a health lens is to

be used, it is worth considering the use of layered policy objectives, with measurable goals — such as changes in sales, consumption and reformulation of products to reduce sugar content — stated as more proximal or intermediate objectives, with a clear pathway of effects to demonstrate how these objectives can contribute to achievement of a larger goal related to protecting public health. In contrast if changes in prevalence of health conditions, such as type 2 diabetes or obesity, are stated as the policy objective, demonstrating progress toward achieving the policy becomes more difficult given the multiple causative factors for these conditions. Additionally, the effects of the SSB tax on observable population effects will lag — leaving the policy vulnerable in the short-term to industry attacks for perceived lack of effectiveness.

Conversely, if a revenue-generation lens is used, it is important to accurately project revenues (under several scenarios) to avoid overestimating revenue expectations, as underperformance can later be used by opponents to weaken support for a tax. Lastly, if an SSB tax is to be formulated as a combination of both health and revenue, the policy objectives should be made very clear to avoid leaving the policy vulnerable to criticism and to ensure that these objectives are reconciled. Evidence from the Pacific islands indicates that framing the SSB tax both from the health and revenue angles can increase public and political support *(55, 204)*.

Another element within the framing of SSB policies that has proven effective in increasing public acceptability and support is the use of earmarking for either health or social programmes (see also section 3.4.3 for a discussion on framing the tax) *(144, 188, 200, 206)*. Countries have channelled earmarked SSB tax revenue to fund, among other things, healthy food incentives, nutrition schemes for school children, expanded access to health care, potable drinking water in schools, school meal programmes or other general health initiatives *(144)*.

It should be noted nonetheless that earmarking is a contentious topic that goes beyond the specifics of SSB tax earmarking and into the ambit of public financial management — where it is not generally encouraged *(186)*. From a public health perspective, SSB tax earmarking is best understood as a way of selling such taxes to the public, politicians and officials. It is a tool to improve the political economy of SSB taxation; it is a secondary issue only, after the primary goal of reducing demand for such products.

6.3 CHAPTER 6 MAIN TAKEAWAYS

- Excise taxes on SSBs have traditionally faced fierce opposition from industry representatives and their allies with vested interests that potentially conflict with the public health objectives of these taxes. The industry, which stands to lose from these policies' introduction, use a series of strategies and often factually inaccurate claims to distort the public debate and diminish political support.
- Industry often asserts that SSB taxation is not evidence-based and tries to divert attention towards alternative interventions, such as physical activity and education campaigns, that should be considered as complimentary initiatives to tax policies, but not substitutes.
- Threatened or actual legal challenges to SSB taxes are often used to create a so-called "regulatory chill" effect, delaying, postponing or weakening the planned tax. However, SSB taxes can be well-designed, evidence-based, with clear, layered objectives, that comply with domestic and international legal commitments and requirements — all of which strengthen a government's legal position in the event of legal challenge.
- Industry and its agents often misleadingly claim that SSB taxes may result in cross-border shopping, adverse burden on poor populations, and employment losses.
- Where a tax serves the public interest, it is important to proactively pre-empt and counteract common criticisms from vested interests to avoid weakening, delaying or avoiding implementation of SSB tax policies.
- The use of strong scientific evidence to support policy decisions, a strong coalition of support, a well-developed advocacy strategy and strategic framing are all elements that strengthen an SSB tax policy's likelihood of success.

CHAPTER 7.

Policy monitoring

It is critical that the performance of an SSB tax is assessed relative to its objectives. Credible and transparent efforts to assess changes and impacts associated with policies can provide information to inform the reform, improvement or even expansion of a given policy. SSB tax policies, as with other NCD-prevention policies, are complex, and changes in consumer behaviour are contingent on various behaviour changes taking place.

As such, evaluation of an SSB tax should be informed by a theory of change or logic model where earlier changes can be observed. The tracing of policy impact across the chain of theorized or anticipated change can be used to understand the magnitude of the ultimate policy effects. This is important not only for documenting when a tax has been effective in achieving its objectives but also for improving the tax design and for identifying the sources of ineffectiveness, and where changes in design or implementation need to be made. For example, using this approach Hungary has conducted refinements of its public health product tax, which includes SSBs, to ensure that it is effective in achieving the defined objectives *(54)*.

The best evaluations acknowledge contextual factors, feedback loops, the possibility of unintended consequences and the interplay of other external factors such as political support, public opinion, social norms and industry response *(319-321)*. Even taxes set at 20% may have a much smaller influence on consumer behaviour if the industry pass-through is less than 100%, such that it is important to understand market dynamics when considering implementation *(53)*. Many factors influence consumption behaviour and health, however, and it would be unrealistic and inefficient to try to capture them all *(322)*. Policy-makers must determine which factors are likely to have the most significant impact and focus on those. Key factors can be revisited with each evaluation and updated as needed.

When setting the starting rate for a tax, policy-makers should ensure that it is large enough to make a detectable difference. The coarse granularity of purchasing and consumption data, along with the decreasing effects with each subsequent outcome along the causal chain (purchasing, consumption, energy intake, BMI, diseases, mortality), make it difficult to detect small but genuine effects. In the short-term, even relatively large taxes such as a 20% rate (assuming full pass-through) may have only relatively modest effects on health outcomes because there is a significant time

lag between policy implementation and the time it takes for health outcomes of interest, such as diabetes type 2 and cardiovascular disease, to develop *(323)*. Higher tax rates (e.g. 20%) are estimated to result in a greater decrease in the prevalence of overweight and obesity compared to lower rates, such as 10% (assuming equal pass-through) *(129)*.

Regardless, by focusing the evaluation on subgroups that will be more exposed to the tax (identified by modelling studies) or intermediate outcomes, evaluations stand the best chance of detecting genuine changes. A lack of change in these groups provides more convincing evidence for the null than changes in the population mean *(324)*. This section considers what to measure in an evaluation, how to establish a possible causal impact, and specific indicators.

7.1 THEORIES OF CHANGE

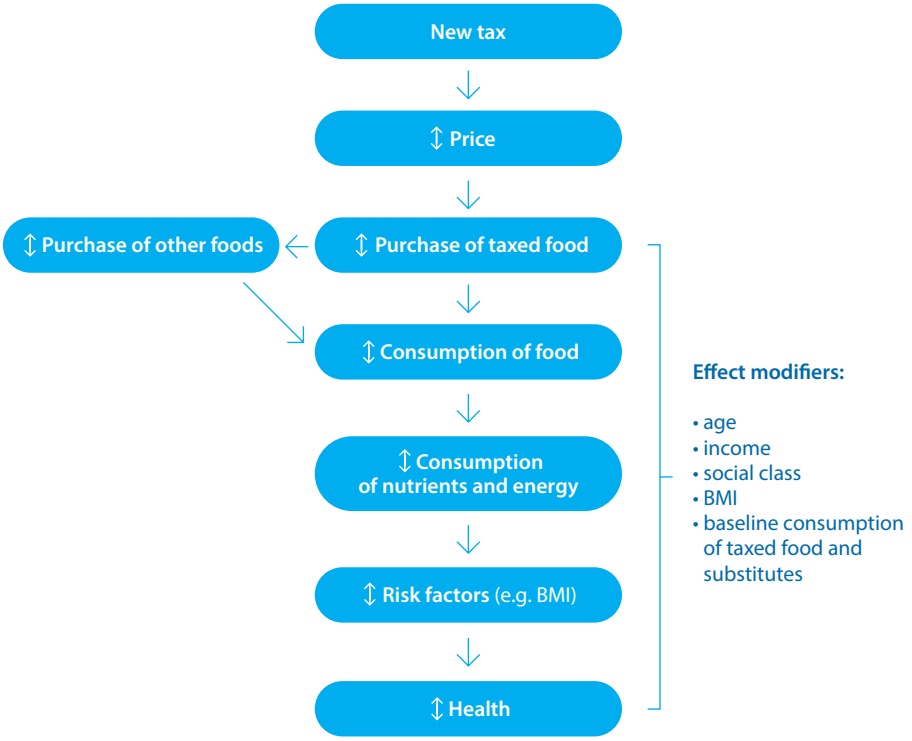
Many published evaluations report on post-implementation effects. This may create the impression that evaluations can be undertaken after implementation, but the work underpinning an effective evaluation will take place at all stages of the policy development process. In particular, when undertaking the solution-generation process for a given tax policy, one should think through how a policy may produce the intended outcomes. Underpinning any evaluation should be some framework for how a policy or intervention would bring about the desired outcomes *(324, 325)*. This is often referred to as a theory of change or logic model and consists of identified agents or actors and the measurable actions or changes in behaviour they are hypothesized to undertake in response to the implementation of the proposed policy. An example of a logic model for an obesity-prevention motivated tax on SSBs is presented in Figure 7.1 on the next page.

This logic model suggests the following series of questions that an evaluation could seek to assess:

- What happened to prices of targeted SSBs?
- What happened to purchases/consumption of targeted SSBs?
- What happened to purchase/consumption of other untargeted beverages?
- What happened to reported intake of total energy and free sugars?
- What happened to BMI, diabetes incidence and other risk factors/associated health conditions?

Investigating these questions would require the measurement of appropriate indicators for each. Approaches that have been adopted for the measurement of some of these indicators in prior evaluation studies are presented in the following section.

Fig. 7.1 Logic model for data collection to demonstrate outcomes and impact



Source: Author's own elaboration based on *(324)*

7.2 EVALUATION INDICATORS

7.2.1 MEASURING CHANGES IN BEVERAGE PRICES

The extent to which taxes impact consumer purchases of taxed SSBs and their substitutes will be determined by the extent to which their prices change in absolute and relative terms. There are many ways to source data on the prices of beverages, including national statistical authorities for the compilation of consumer price indices *(71, 103, 326)*.

7.2.2 MEASURING CHANGES IN PURCHASES

Data on household expenditure can provide a detailed look at the quantities of beverages purchased. There are different types of household expenditure data. National budget or income expenditure surveys are often undertaken by national statistical agencies and can provide estimates of quantities of products purchased by households *(327)*. Another useful source of data on household purchases is household scanner

datasets collected by private market research companies that have been utilized to examine purchase changes with the introduction of SSB taxes *(72, 111, 116, 140)*. These can be particularly useful as they provide data on household purchases at a highly disaggregated product level, allowing for identification of trends in taxed and untaxed products and, if accompanied by detailed information on nutrient densities, nutrient intake. A limitation of expenditure data is that it is typically measured at the household level and, as such, prevents inferences on beverage consumption at the individual level. More information on data sources can be found in the WHO publication on *Using third-party food sales and composition databases to monitor nutrition policies (328)*.

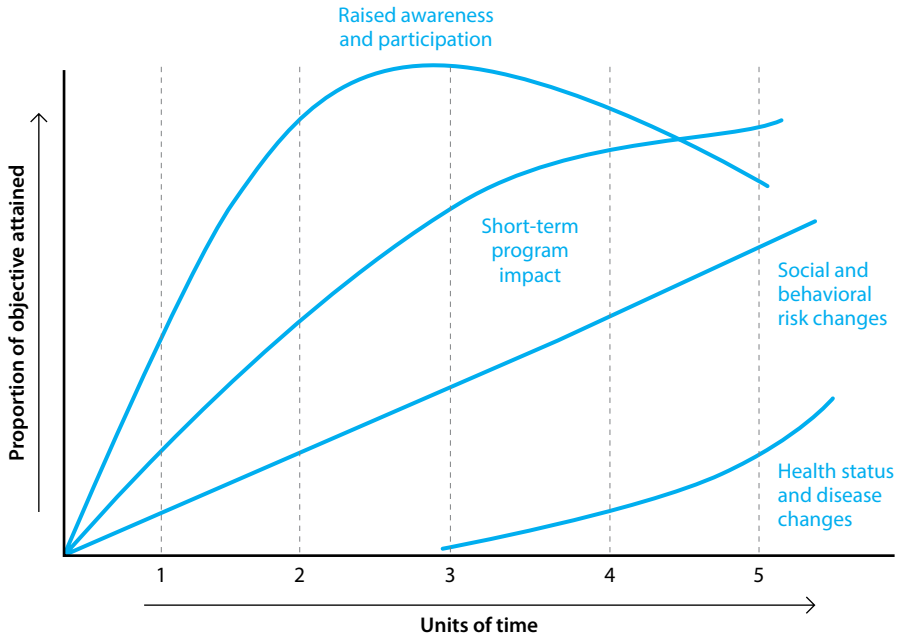
7.2.3 MEASURING CHANGES IN CONSUMPTION AND DIETARY INTAKES

Measuring individual energy and nutrient intake requires specific types of surveys. Quantities of foods consumed are typically measured through dietary assessment methods such as 24-hour recalls, food diaries or food frequency questionnaires. These are combined with food composition tables, which indicate the nutrient contents of foods to estimate the nutrient and energy intakes. These dietary assessment methods allow for assessing individual consumption of taxed and untaxed products (or nutrients) but are subject to some measurement and recall error. However, if measurements are undertaken repeatedly over time these tools can provide a sense of the overall trends.

7.2.4 MEASURING HEALTH IMPACTS

It would be inappropriate to judge the success of a tax purely by looking at health status — for instance, diabetes incidence a month after introduction. This is an important outcome measure, but it will take some years before dietary changes resulting from food taxes produce a measurable impact. Proximal outcomes such as increased sales and purchases of products with lower sugars content are much easier to detect and, although they are gross estimates, they can be used to approximate improved dietary intakes (i.e., reduced consumption of sugars), which can then be used to estimate health impacts (including changes in body mass index, disease prevalence, and mortality). Figure 7.2 provides a visual representation of how various objectives are attained over time.

Fig. 7.2 Distribution of outcomes and impact over time



Source: *(329)*

7.2.5 MEASURING REVENUE COLLECTION

Revenue is the most immediate indicator of the impact of an SSB tax, and once implemented trends in revenue can potentially be used to track changes in sales. This approach is particularly powerful when specific taxes are levied by beverage volume or by sugar content. While confidentiality laws typically preclude the public reporting of taxes paid by particular entities, revenue authorities are typically able to report aggregate revenues by tax instrument.

7.3 STUDY DESIGN AND CAUSALITY

Assigning causality in observational settings is challenging, particularly in the case of SSB taxation, where policies are often implemented at the national level, precluding natural controls. Observational studies, and in particular longitudinal studies can be a useful means of evaluating SSB policy interventions, especially when they control for seasonal and cyclical variation as well as for pre-tax hoarding *(324)*. Mytton and colleagues recommend using interrupted time-series analyses or regression analyses for assessing changes in food purchasing *(324)*. Cross-sectional studies (and sales data) provide weaker evidence; however, repeated consumer panels before and after the introduction can provide useful data. Where price and consumption data

are linked, directly observed prospective data on consumers' revealed preferences provide the strongest form of evidence. Another source of evidence for causality is naturally occurring dose-response data. Differing impacts in groups with higher and lower consumption of target items (e.g. urban young people versus rural older persons in the case of SSBs) can help to attribute causality, leaning on the classic Bradford-Hill criteria *(330)*. Ng et al. provide a useful framework of natural experiment and simulation methods used for evaluating sweetened beverage taxes, along with their advantages and disadvantages *(331)*.

7.4 CHAPTER 7 MAIN TAKEAWAYS

- Many potential indicators can provide evidence that the tax is working as intended/achieving the policy objective.
- Health outcomes take time to manifest and are harder to link causally with the tax than more proximal outcomes such as changes in consumption or product reformulation.
- Establishing potential causal impact of a tax policy requires longitudinal data.
- It is easiest to detect changes and attribute causality for outcomes such as sales or sugar content of taxed products with large taxes.

CHAPTER 8.
Conclusion

There is robust evidence associating the consumption of free sugars—including those consumed though SSBs—with a growing global morbidity and mortality burden. Global interest in SSB taxes is warranted by the rise in obesity and diet-related NCDs, the rise in consumption and affordability of SSBs, and the fact that SSBs contain little-to-no added nutritional value and can displace consumption of other healthier alternatives.

There is firm evidence that well-designed SSB taxes can reduce the consumption of targeted items. Such taxes should be implemented as part of a broad and multisectoral strategy to improve food environments and promote healthy diets to improve nutrition and prevent obesity and diet-related NCDs. Countries considering SSB taxes should be encouraged to take a holistic view and to think through each step of the policy development process. This manual has presented an overview of the entire policy cycle and has emphasized the importance of considering the wider political context, as well as the technical and legal feasibility of adopting new measures. The evidence base, motives of key actors and the most appropriate indicators for gauging success have also been highlighted, alongside real country examples.

The specific strengths and weaknesses of a tax are determined by the design. Policymakers can adjust the tax type, rate, structure and base to achieve their objectives and mitigate the most relevant adverse health consequences. Adverse substitution of other unhealthy food and drink products is one of the key limitations; it can be overcome with attention to the design of the tax and with other incentives and regulations mediated through the broader strategy on diet and nutrition in the national context.

Industry may claim that taxes harm the profitability of companies that primarily produce the targeted items. Taxes may also present administrative costs for companies in the agri-food sector. As a result, taxes are often resisted vehemently by industry and other groups. However, such arguments are not always underpinned by robust independent evidence. At the same time, taxes can correct established negative externalities, and promote public health. This manual has provided an overview of common industry tactics used to undermine fiscal measures, as well as a set of points that can be used to counter industry attempts to interfere in the policy-making process.

Over the past several decades, multiple global commitments have been made to use fiscal policies to improve diets and health; this manual provides guidance to member states to effectively put their commitments to action and improve population health.

ANNEX 1. SOURCES OF INFORMATION FOR THE HEALTH-RELATED COMPONENTS OF SITUATIONAL ANALYSIS

Health data can be obtained from a variety of sources, including government departments and international bodies such as WHO. Dietary data are ideally derived from nationally representative nutrition surveys based on sound dietary assessment methods — such as multiple 24-hour dietary recalls — that will help identify which foods contribute most to the intake of free sugars. However, these are not always available.

One of the surveys that can be consulted is the WHO NCD risk factor surveillance (STEPS) survey, which seeks core data on the established behavioural and physiological risk factors that determine the major disease burden, including dietary data on consumption of fruits, vegetables and salt *(332)*. School-based student health surveys provide information regarding frequency of consumption of fruits and vegetables, carbonated soft drinks and fast foods, as well as the nutritional status of school-aged children *(333, 334)*. Household income and expenditure surveys are the other instruments used to determine food acquisitions and/or food consumption and behaviour.

Otherwise, third-party food sales and composition data can also potentially be used, as they are often detailed and can be used to supplement or replace more traditional data sources such as national dietary surveys. The WHO Regional Office for Europe recently produced a fact sheet on using third-party food sales and composition databases to monitor nutrition policies, in which the characteristics, availability, strengths and limitations of available sources are assessed *(186)*.

In some countries, data on food sales and composition data by food or beverage type, category, brand and package size can be obtained from market research companies and industry associations. A challenge with this type of data is that the methods and sources used to produce estimates can be proprietary and therefore confidential, which can make assessment of the validity, reliability, representativeness and comparability of the estimates challenging. As such, where possible, analysis should be based on production and purchase data collected by the national statistical office, such as agricultural and industrial production surveys or household income and expenditure surveys.

Some other potentially useful cross-country databases are the WHO Global Health Observatory, which includes more than 100 indicators for its 194 Member States; the FAO/WHO GIFT (Global Individual Food consumption data Tool), FAOSTAT and the World Bank Global Consumption Database, which include information on food consumption; and the 2015 international assessment of SSB consumption by Sing et al. (4, 335-338). However, limitations in the methods used to construct comparable estimates of consumption across countries, as well as the types of underlying surveys used in a given setting, should be taken into account.

SSB TAX REFORM CHECKLIST

(FOR TAX POLICY-MAKERS)

STEP 1

Conduct a situational analysis

A situational analysis is ideally the first step in the development and execution of a realistic plan to implement SSB taxes. Situational analysis involves a systematic collection and analysis of health, social, demographic, economic and political information in order to more thoroughly understand the context in which an SSB tax would be implemented. A detailed situational analysis can not only help substantiate the case for the tax but will also identify potential opportunities as well as challenges or risks that may be faced in the process of developing and implementing an SSB tax.

STEP 2

Specify the SSB tax policy objectives

Specifying objectives serves a number of purposes. First, specifying objectives will assist policymakers in identifying and designing appropriate policy solutions. Second, it can assist in the implementation of policies by providing clear motivations for legislators and stakeholders. Third, it can help appropriately frame the SSB tax to safeguard against industry attacks. Finally, pre-specifying objectives allows for the identification of indicators that can be used in evaluation of the policy.

STEP 3

Assess political support

Reform must include an assessment of SSB taxation's political economy: (1) learn from past successes and failures – what went wrong, what went right, what you can do differently this time; (2) assess the reform's strengths and weaknesses, likely opportunities and risks; (3) determine who the main supporters and opponents of reform inside and outside of government have been and may be, based on past reforms and current situation; and (4) anticipate arguments that will be used against the reform (refer to SCARE tactics) and prepare evidence to counter industry arguments ahead of time.

STEP 4

Prepare a plan for realizing the reform

Focusing on the overall aims identified in Step 2, the situational analysis in Step 1, and the political economy around this reform as identified in Step 3, prepare your plan:

1. Be clear on the non-negotiable objectives for the reform and the trade-offs you are prepared to make to realize them.
2. Develop a plan to approach potential allies and win them over to the reform efforts.
3. Develop a strategy to counter industry efforts to weaken, delay or avoid the implementation of SSB taxes. This includes gathering or developing evidence on counterarguments that will be needed to refute SCARE arguments commonly used by the SSB industry. To do this, get support from academics, civil society, and relevant intergovernmental agencies.

STEP 5

Mobilize a coalition for reform

1. Formulate a strategic communications plan: aim for political support both at the highest levels and among the public (framing SSB taxation as a health issue and earmarking of mobilized revenue has helped win political support in many countries).
2. Identify champions in government: ensure that finance and health officials are on the same page; involve implementing departments, such as enforcement agencies, from the start.
3. Mobilize allies from academia, civil society and the private sector to counter the anticipated pushback from the SSB industry, its proxies and its allies.

STEP 6

Monitor and evaluate

To make the most well-informed policy decisions, a reform effort should be monitored to assess its overall impact and its effect on key indicators; this will help identify issues to be fixed while also creating a strong evidence base for further reform efforts.

Get and analyse the relevant data to better understand the market situation and its dynamics:

1. Monitor the market and its evolution (e.g. retail prices, duty-paid sales, market shares).
2. Get regular estimates of price elasticity (including cross-price elasticity), income elasticity and tax base elasticity to evaluate any changes in SSB demand.

Use relevant tools to assess the impact of the tax policy on consumption and revenue:

1. Use specific tools on the impact of excise on price, consumption and revenue (e.g. the WHO TaXSiM).
2. Use global tools to assess the tax increase's impact on prevalence (e.g. the WHO ISPT).

Monitor key indicators closely to assess improvements over time:

1. Tax as a percentage of retail price.
2. Change in affordability of SSB products over time.
2. Change in sales of SSB products over time.

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